CHIZHEVSKIY, M.G., prof., doktor sel'skokhoz.nauk; RUMYANTSEV, V.I., kand. sel'skokhoz.nauk

Cultivation of clean fallows in the Southeast. Zemledelie 7 no.9: 81-84 S '59. (MIRA 12:11)

1. Moskovskaya ordena Lenina sel'skokhozyaystvennaya akademiya imeni K.A. Timiryazeva.

(Volga Valley--Fallowing)

CHIZHEVSKIY, M.G., prof., doktor sel'skokhoz.nauk; KISELEV, A.N., dotsent, kand.sel'skokhoz.nauk

Methods for experiments under field conditions. Zemledelie 7 no.10:70-77 O '59. (MIRA 13:1)

1. Moskovskaya ordena Lenina sel'skokhozyaystvennaya akademiya imeni K.A.Timiryazeva.
(Agriculture—Experimentation)

CHIZHEVSKIY, M.G., doktor sel'skokhozyaystvennykh nauk, professor

Principal problems of soil cultivation in different natural zones of the U.S.S.R. Izv. TSKhA no.2:39-52 '60. (MIRA 14:4)
(Tillage)

CHIZHEVSKIY, M.G., doktor sel'skokhozyaystvennykh nauk, prof.; GRESHIN, I.P., kand.sel'skokhozyaystvennykh nauk; GROMYKO, I.D., kand.sel'skokhozyaystvennykh nauk; KAURICHEV, I.S., kand.sel'skokhozyaystvennykh nauk

"Principal problems of agriculture in the Far East" by A.G.Novak. Reviewed by M.G.Chizhevskii and others. Izv.TSKhA no.5:234-237 '60. (MIRA 13:11)

(Soviet Far East--Agriculture) (Novak, A.G.)

CHIZHEVSKIY, M.G., doktor sel'skokhozyaystvennykh nauk, prof.,
GLUKHOV, Y.M., kand.sel'skokhozyaystvennykh nauk

Effectiveness of various methods of fall plowing in weed control.
Izv. TSKhA no.6:62-67 '60. (MIRA 13:12)

1. Direktor Mitrofanovskogo opytnogo polya (for Glukhov.
(Plowing) (Weed control)

CHIZHEVSKIY, M.G., prof., doktor sel'skokhoz.nauk; MIROSHNICHENKO, V.Ye., kand.sel'skokhoz.nauk.

Fall plowing with moldboard and moldboradless plows for spring and winter grain crops in the non-Chernozem zone. Izv. TSKhA no.1:49-59 '61. (MIRA 14:3)

(Plowing) (Grain)

CHIZHEVSKIY, M.G., doktor sel'skokhozyaystvennykh nauk, prof.;
BALEV, P.M., kand.sel'skokhozyaystvennykh nauk, dotsent;
OSIN, A.Ye., aspirant

Cultivation and increasing the fertility of light turf-Podzolic soils [with summary in English]. Izv. TSKhA no.2: 40-56 '61. (MIRA 14:8)
(Podzol) (Soil fertility)

L 11224-66 EWT(1) GW
ACC NR: AT6004196 SOURCE CODE: UR/2531/65/000/174/0149/0157

AUTHOR: Chizhevskaya, M. P.

23
B+1

ORG: Main Geophysical Observatory, Leningrad (Glavnaya geofizicheskaya observatoriya)

TITLE: Radiation balance 12,44,55 of the underlying surface according to observations in Voyeykovo

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 174, 1965. Metodika meteorologicheskikh nablyudeniy i obrabotki (Methods of meteorological observation and processing observation data), 149-157

TOPIC TAGS: radiation balance, meteorology, actinometry

ABSTRACT: The paper is a generalization of data from observations of the radiation balance at the meteorological station in Voyeykovo. Periodic observations of radiation balance were begun in Voyeykovo in 1950 and recording was started in 1954. Up until 1953, the instruments were located above the bare surface of the plowed soil. Beginning in June 1953, actinometric observations were made above the natural grass

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2

covered surface. Up until 1956, the radiation balance was observed and recorded by a Yanishevskiy pyrgeometer, and a thermoelectric radiation balance meter was used beginning in January 1956. A table is given comparing the monthly totals for standard observations with recorded data for the period from 1957 to 1963. The table shows good agreement in the summer months with deviations of no more than 9%. The differences reach 14-17% in winter months, 50% in March, and 33% in October. These large deviations are explained by low absolute values of the radiation balance. The yearly total for radiation balance calculated from standard observations is 4% higher than the total determined from recorded data. A table is given showing the total radiation balance under a clear sky determined from recorded data. The results show that the radiation balance under a cloudless sky is negative and changes very little during the day in the cold season of the year when there is a permanent snow cover and the height of the sun is low. The radiation balance in the winter is symmetric with respect to noonday. In the warm season, the sign of the radiation balance changes during the day. At sunrise under a clear sky, transition through zero is observed at solar heights of about 7-8%, and before sunset at solar heights of about 8-9%. The radiation balance reaches a maximum at noon. From April to August, the forenoon radiation balance is 2% higher than the afternoon balance which is due mainly to the asymmetric diurnal variation in total radiation. It was found that

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ACC NR: AT6004196

cloudiness has a considerable effect on radiation balance. Curves are given showing the radiation balance as a function of the height of the sun and the albedo of the underlying surface. These curves show that overcast skies reduce the level of the radiation balance, clouds in the upper level reducing the radiation balance by 10%, clouds in the middle level by 55-62% and in the lower level by 80%. Cloudiness reduces the long wave radiation, so that the attenuation of the radiation balance is less pronounced than the reduction in total radiation under the same conditions. Analysis of observational data shows a reduction in radiation balance due to cloudiness at night. An increase in albedo by 10% when the sun is at a height of 20° reduces the radiation balance by an average of 0.03 cal/cm^2 per minute. The total annual radiation balance averaged over nine years is 31.7 Kcal/cm^2. Orig. art. has: 4 figures, 5 tables.

SUB CODE: 08/ SUBM DATE: 00/ ORIG REF: 008/ OTH REF: 000

TS

Card 3/3

CHIZHEVSKIY, N. P. (Deceased)

Metallurgy

See ILC

Chizhevskiy, S.K.

SHEYNMAN, Vladimir Il'ich [deceased]; CHIZHEVSKIY, Stanislav Kazimirovich; SINKL'NIKOVA, TS.B., red.; SUDAK, D.M., tekhn.red.

[Fruits and vegetables; a reference manual] Plodoovoshchnye tovary; spravochnoe posobie. Moskva, Gos. izd-vo torg.lit-ry, 1957 298 p.
(Fruit) (Vegetables) (MIRA 11:4)

CHIZHEVSKIY, S.

Use of sprays in vegetable markets. Sov.torg. no.9:45-48 S '57.
(MLRA 10:8)

(Produce trade)

CHIZHEVSKIY, S.

Refrigerating equipment in vegetable stores. Sov.torg. no.6:51-54 Je '58. (MIRA 13:2)
(Moscow--Vegetable trade)

CHIZHEVSKIY, S.

Covenient equipment. Sov.torg. no.3:30-32 Mr '59.
(MIRA 12:4)
(Store fixtures)

MANILOVA, R.Z., inzh.; CHIZHEVSKIY, S.V., inzh.

The technology of automatic welding and a study on the strength of butt welds of I beams made during assembly. Trudy NII mostov no.5: 100-122 '59. (MIRA 12:7)
(Welding--Testing) (Girders)

34724
S/137/62/000/002/123/144
A052/A101

1.2300 (a No. 2408)

AUTHOR: Chizhevskiy, S. V.

TITLE: Automatic argon-arc welding of AMr -6 (AMg-6) aluminum alloy

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 19, abstract 2E97 ("Sb. tr. Leningr. in-t inzh. zh.-d. transp.", no. 6, 1961, 143-162)

TEXT: The purpose of the paper is to report on some works carried out by the welding laboratory of NIImostov in 1958 - 1959 on the process of automatic argon-arc welding by fusible wire 2 - 4 mm in diameter and on the development of welding conditions for joints of AMg-6 Al-Mg-alloy 10 - 30 mm thick. The following problems are considered: the welding equipment and materials, the method of investigations, the selection of conditions of the automatic argon-arc welding by a fusible wire, the form of the metal transfer in the arc, the effect of the welding parameters on the form and dimensions of seams, the quality of the built-up metal, the efficiency of the automatic argon-arc welding of Al. The following conclusions are made: 1) In the absence of special automatic machines for welding with a fusible wire 2 - 5 mm in diameter in argon medium, the existing flux welding equipment of TC -17 (TS-17), АДС-1000 (ADS-1000)

Card 1/2

S/137/62/000/002/122/144
A052/A101

18.1210

AUTHORS: Navrotskiy, D. I., Savel'yev, V. N., Chizhevskiy, S. V.

TITLE: The strength of AMг-6 (AMg-6) aluminum alloy welded joints

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 13, abstract 2E61 ("Sb. tr. Leningr. in-t inzh. zh-d. transp.", no. 6, 1961, 163-172)

TEXT: The Al-Mg-alloy AMg-6, 10 and 16 mm thick, was investigated. The degree of the strength reduction of welded butt joints and of joints with angle seams was determined. The methods of raising the strength of such joints were worked out. The investigations of the static and vibration strength have shown that AMg-6 alloy is much more sensitive to variable loads than the low-carbon steels. The static strength of AMg-6 welded joints is determined basically by the strength of the thermal effect zone. At intensive heating in the process of welding the static strength of a welded joint is 80.5 - 92% of that of the base metal. The vibration strength of a welded joint relative to that of the base metal decreases to a still higher degree. For welded joints with angle seams without an additional local processing of the seams, it makes up 52 - 57%,

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45235

S/758/61/000/006/001/002

12300

AUTHOR: Chizhevskiy, S.V., Engineer.

TITLE: Automatic argon-shielded arc welding of the aluminum alloy AMr-6 (AMg-6).

SOURCE: Leningrad. Nauchno-issledovatel'skiy institut mostov. Sbornik trudov, no.6, 1961. Soyedineniya elementov konstruktsiy iz alyuminiyevykh splavov. pp. 143-162.

TEXT: The paper extends the work of J.C.Needham and A.A.Smith (Arc and bead characteristics of the aluminum self-adjusting arc, Brit.Weld.J., v.5, no.2, 1958), who discussed arc-welding operations with a consumable-electrode wire 1.6-mm diam, to include wire in the 2- to 5-mm range, primarily for the Ar-shielded welding of sheets thicker than 6-8 mm made of the thermally nonhardenable AMg-6 and AMg-6T Al-Mg alloy. More specifically the paper describes work done in 1958/59 at the welding lab of the Scientific Research Institute for Bridges on Ar-shielded automatic welding of 10- to 30-mm thick sheets of AMg-6 alloy with a consumable 2- to 4-mm diam electrode wire. 1. Equipment: In the absence of special automatic welding equipment for the type of welding tested here, submerged-ment of the TC-17 (TS-17), AIC-1000 (ADS-1,000), and others

can be employed after some modification. A TC-17MU (TS-17MU) with a broad range of electrode-wire feed rates and welding speeds (WS) was utilized. The modifications applied to the equipment are described. The AMg-6 sheets welded were 3,000 x 1,200 mm. The specific gravity of the alloy was 2.71 g/cm^3, its electric conductivity 26% (of that of Cu), its Poisson coefficient 0.3, and its $E = 7.12 \cdot 10^5$ kg/cm^2. The mechanical properties of the alloy vary with antecedent treatment (hot-rolling or pressing). The chemical composition and mechanical properties of sheet and profile material are tabulated (3 tables). 2. Test method: The purpose of the tests was the establishment of basic relationships between the feed rate (FR) of electrode wire of differing diam and the current intensity (I), between the shapes and size of the seams and the welding parameters, et al. The tests consisted in welding a bead onto plates 400 x 300 mm at various FR, WS, arc voltage, and metal thickness. The plate was held at room temperature. Test sections were cut at 60-80 mm from either end of the weld. Etching was done in a 15-20% warm alkaline solution; neutralization in 50% HNO_3. Observational comparison determined optimal welding parameters for each wire diam. The optimal procedure thus selected was further tested on square-edged butt joints (without edge beveling) with sheets 10 mm thick and on double-V-beveled butt joints with sheets 10-30 mm thick. The total convergence angle of the edge bevel was 70-80°, with an additional edge cut-back of 1-3 mm. Final selection of welding-process parameters was based on the quality

of the bead and the results of static and vibrational mechanical tests of the welded joints (reported by D.I.Navrotskiy, V.N.Savel'yev, and S.V.Chizhevskiy in the paper immediately following in this compendium, Abstract S/758/61/000/006/002/002). 3. Selection of welding procedures. Normal welding procedures were developed by welding test beads on plates 20 mm thick. Arc voltages of 23-25 v, a welding speed of 25 m/hr, an electrode-wire protrusion of 12-15 mm, and an I from 140-380 a for 2-mm diam wire, 190-440 a for 3-mm diam wire, and 240-520 a for 4-mm diam wire were used. For each wire diam a limited range of practicable welding parameters was identified (ranges tabulated and graphically portrayed). With increasing wire diam the range of feed rates decreases, the range of I does not change, but the I values increase. The Needham-Smith observations regarding the jumplike transition from the droplet to the stream process of metal transfer in the arc are confirmed; the transition occurred at 80, 50, and 35 a/mm^2 for the 2-, 3-, and 4-mm diam wire, respectively. With increasing arc voltage the stream-process formation commences at lower I. The effect of welding speed is smaller. The shape and size of the weld is affected by the process parameters as follows: Increasing the welding-current I and the I density enlarges the weld; the increase in penetration is most pronounced, with the formation of a bottom "tongue" or toe in the stream regime (graph shown) in normal I ranges. Increase in welding speed (16 to 41.5 m/hr) reduces the size of the weld (graph shown). Increase in arc

voltage increases the width of the penetration; the effect was somewhat confused by I and welding-speed effects. The effect of changes in sheet thickness alone are discussed in detail. The quality of the welded joints was found to be inferior to the quality of the initial metal. The weld metal and the parent metal in the heat-affected zone was found to have 90% of the static strength of the unaffected parent metal. The presence of any defects in the welds decreased the strength to 80% and more. Principal defect: Porosity. Recommendations are made for the minimization of porosity in the weld, including the chipping out of a groove into the weld metal applied on the first side and into the double-V root before starting the laying of the first pass on the opposite side (details explained and tabulated). The output rate is limited by the fairly narrow rate of I that can be used for each wire diam but can be increased by multi-layer welding with larger-diam wire. Welding with 2-, 3-, and 4-mm diam wire increases the output rate by (Abstracter's Note: Probably intended to mean "to") 120, 180, and 225% of that achieved with 1.6-mm diam wire. There are 8 figures, 6 tables, and 3 references (2 Russian-language Soviet and the above-cited English-language Needham-Smith reference.)

ASSOCIATION: None given.

45236

18.8200

S/758/61/000/006/002/002

AUTHORS: Navrotskiy, D.I., Savel'yev, V.N., Candidates of Technical Sciences, Chizhevskiy, S.V., Engineer.

TITLE: The strength of welded joints of the aluminum alloy AMr-6 (AMg-6).

SOURCE: Leningrad. Nauchno-issledovatel'skiy institut mostov. Sbornik trudov, no. 6,. 1961. Soyedineniya elementov konstruktsiy iz alyuminyevykh splavov. pp. 163-171.

TEXT: The paper reports strength and endurance tests of the AlMg alloy AMg-6 and AMg-6T, made on specimens 10 and 16 mm thick. The basic finding is that the alloy is significantly more susceptible to variable loads than low-carbon steel. In weldments of AMg-6 alloy the static strength is primarily determined by the strength of the heat-affected zone. In high-temperature-welded specimens the weldment strength was from 80.5 to 92% that of the parent metal. The vibrational strength of the weldment was affected even more severely: In corner-weld specimens it was reduced to 52 to 57%, in butt-welded joints to 84%. Local machining of a joint, to provide a faired transition from parent metal to weld, increases the vibrational strength of the weldment considerably. The specimens tested in this series comprised: (1) Plain sheets, (2) sheets with welded-on stiffening ribs (with and without machined smooth fairings from parent metal to weld); (3) Tee-jointed pieces (with and without machining); and (4) butt joints. The stiffening ribs were welded by hand

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SAVEL'YEV, Vladimir Nikolayevich, kand. tekhn. nauk; CHIZHEVSKIY, Svyatoslav Valeriyevich, inzh.; NAVROTSKIY, Dmitriy Ivanovich, kand. tekhn. nauk; RAZDUY, F.I., red.;

[Technology of welding processes and the strength of welded joints of aluminum-magnesium alloys] Tekhnologiia svarki i prochnost' svarnykh soedinenii iz aliuminievo-magnievykh splavov. Leningrad, 1963. 28 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Svarka, paika i rezka metallov, no.5) (MIRA 17:4)

SOURCE: Ref. zh. Metallurgiya, Abs. 9E27

AUTHOR: Chizhevskiy, S. V.

TITLE: Porosity of seams in welding AMg6 alloy with a consumable electrode

CITED SOURCE: Sb. tr. Leningr. in-t inzh. sh.-d. transp., vy*p. 208, 1963, 181-188

TOPIC TAGS: porosity, weld seam, welding, welding technology, arc welding, alloy, consumable electrode, Al alloy, Al, H, Ar, alloy AMg6

TRANSLATION: The reasons for the appearance of porosity in welded seams in the arc welding of AMg6 alloy have been studied on the basis of literature data. The following conclusions have been reached: 1. Porosity in the arc welding of Al alloys is a result of the presence of H in the fused metal. The most probable source of the H, carried into the welding fusion during arc welding in Ar with a

Card 1/2

L 16132-65
ACCESSION NR: AR4048228

consumable electrode, is moisture adsorbed on the surface of the electrode wire. 2. Cleaning of the electrode wire in a solution of orthophosphoric acid and potassium bichromate brings about a decrease in the amount of moisture adsorbed by the wire surface. The possible service life of a wire after cleaning in this solution is about three times greater than the service life of wire cleaned in alkali. The considerable porosity in welding seams when arc welding in Ar appears in the weld seam 12 hrs after the wire is cleaned with alkali, but appears after 36-40 hrs with the wire cleaned in orthophosphoric acid. 3. The use of wire with a larger diameter should aid in decreasing porosity in seams. 2 figures. 5 literature titles.

SUB CODE: MM ENCL: 00

Card 2/2

RAZDUY, Feliks Ivanovich; CHIZHEVSKIY, S.V., red.

[Helium-arc welding of aluminum alloys] Gelie-dugovaia svarka aliuminevykh splavov. Leningrad, 1964. 31 p. (MIRA 17:11)

CHIZHEVSKIY, V.P. [Chyzhevs'kyi, V.P.], inzh.

Equipment for large poultry houses. Mekh. sil'. hosp. 12 no. 4:30-31 Ap '61. (MIRA 14:4)

1. DSKB po sil'gospmashinakh Kiivs'kogo radnargospu.
(Poultry houses and equipment)

CHIZHICHENKO, D A

Neftepromslovcye khozyaystvo (Petroleum industry economy, by) D. A. Chizhichenko, M. H. Bazlov, P. I. Tsyganok. Moskva, Gostoptekhizdat, 1952. 255 p. diagrs., tables. "Literatura": p. 252

N/5
735.5.
.C5

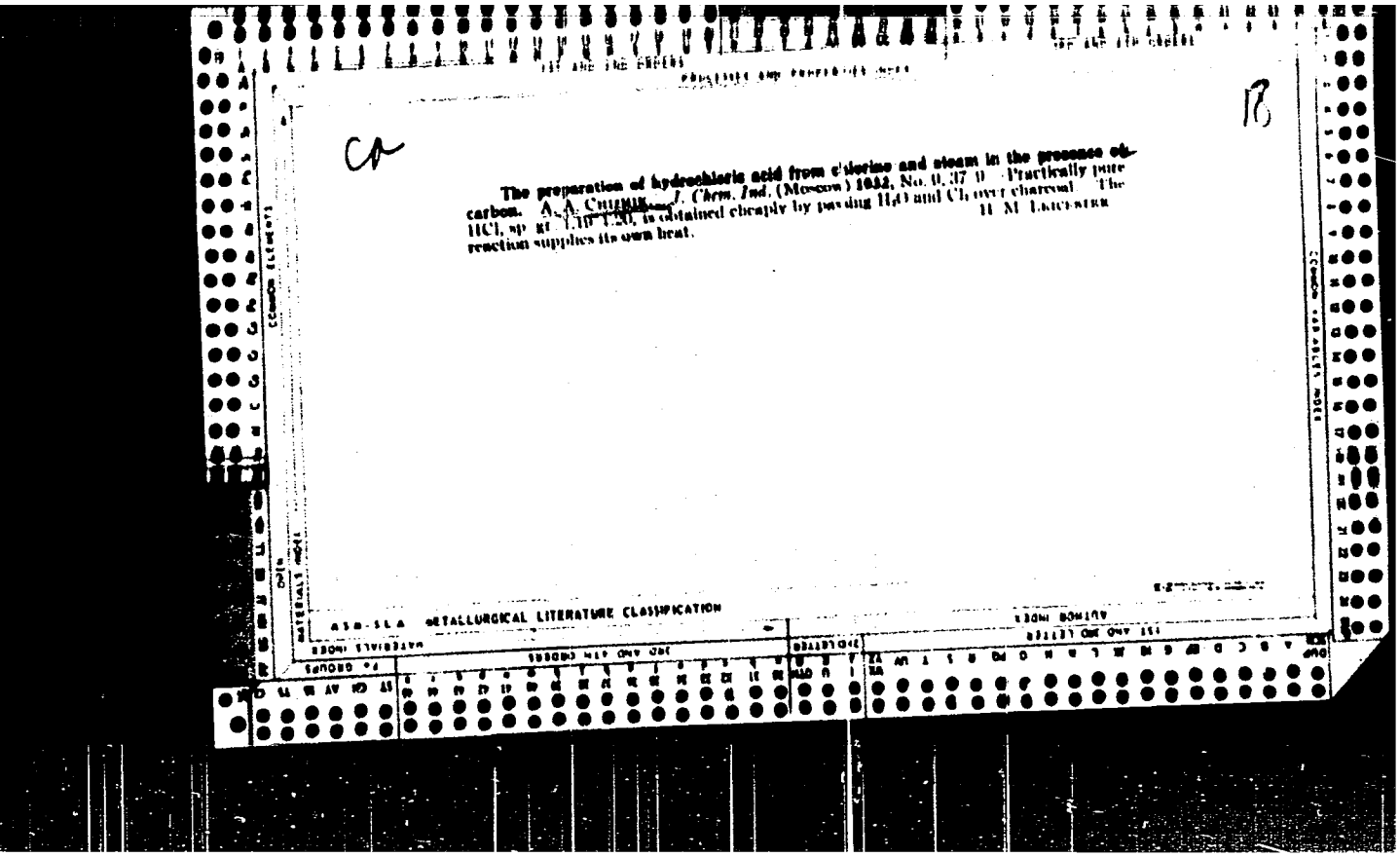
CHIZHICHENKO, Dmitriy Alekseyevich; BAZLOV, Mikhail Nikolayevich; TSYGANOK, Petr Ivanovich; SMIRNOV, L., inzhener, prepodavatel' tekhnikuma, retsenzent; PETROVA, Ye.A., inzhener, vedushchiy redaktor; MUKHINA, E.A., tekhnicheskiy redaktor

[Oil field management] Neftepromyslovoe khoziaistvo. Izd. 2-oe, perer. i dop. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1957. 240 p. (MLRA 10:7)
(Petroleum industry)

CHIZHICHENKO, D.A.

Utilization of mineral waters of oil fields. Vop.kur., fizioter.i lech.fiz.kul't. 27 no.2:173-174 Mr-Ap '62. (MIRA 15:11)

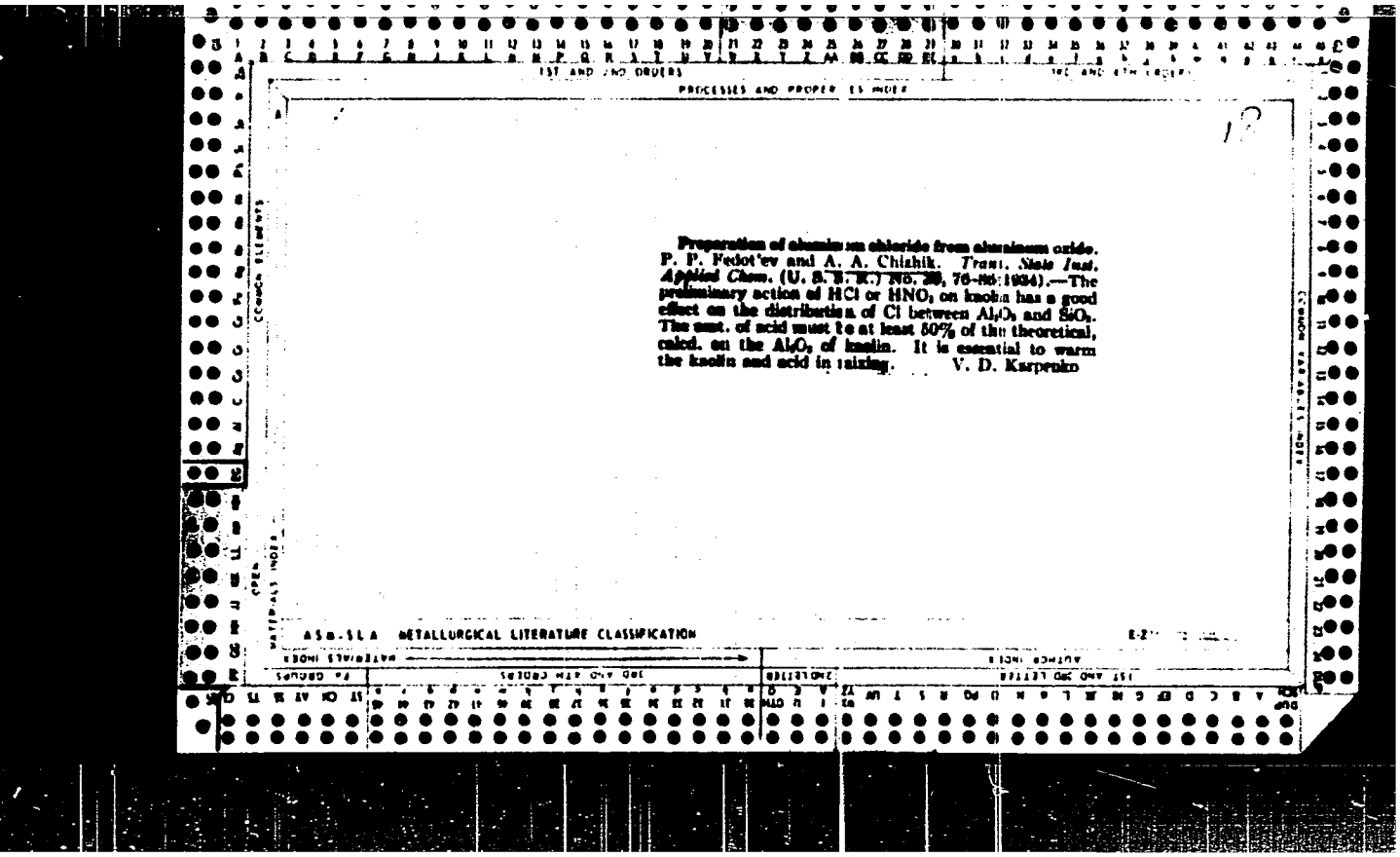
1. Starshiy inzhener neftepromyslovogo upravleniya "Abinneft'".
(OIL FIELDS) (MINERAL WATERS)



The preparation of hydrochloric acid from chlorine and steam in the presence of carbon. A. A. Chuprin. *J. Chem. Ind.* (Moscow) 1932, No. 0, 37-9. Practically pure HCl, sp. gr. 1.19-1.20, is obtained cheaply by passing H_2O and Cl_2 over charcoal. The reaction supplies its own heat.

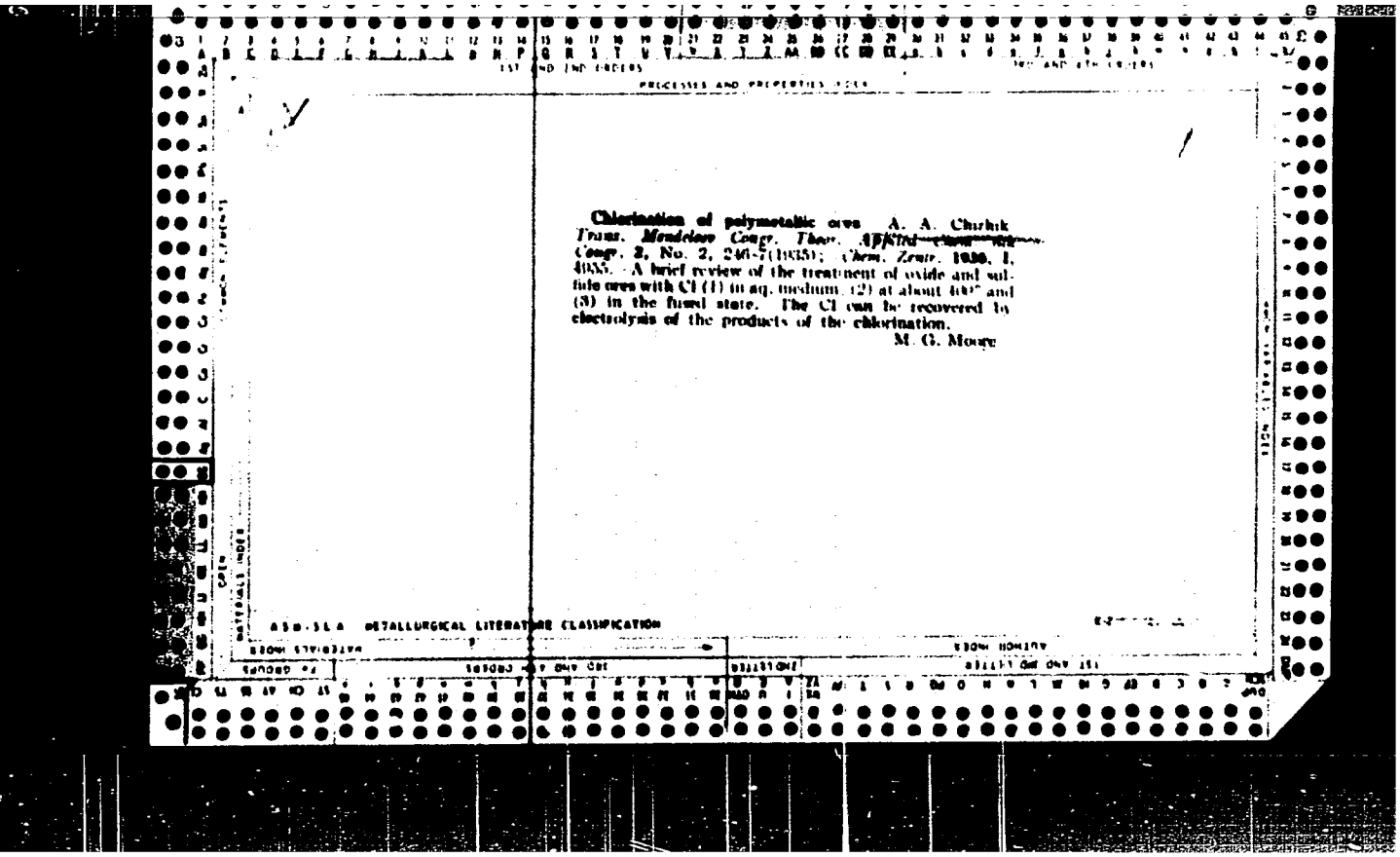
B

METALLURGICAL LITERATURE CLASSIFICATION



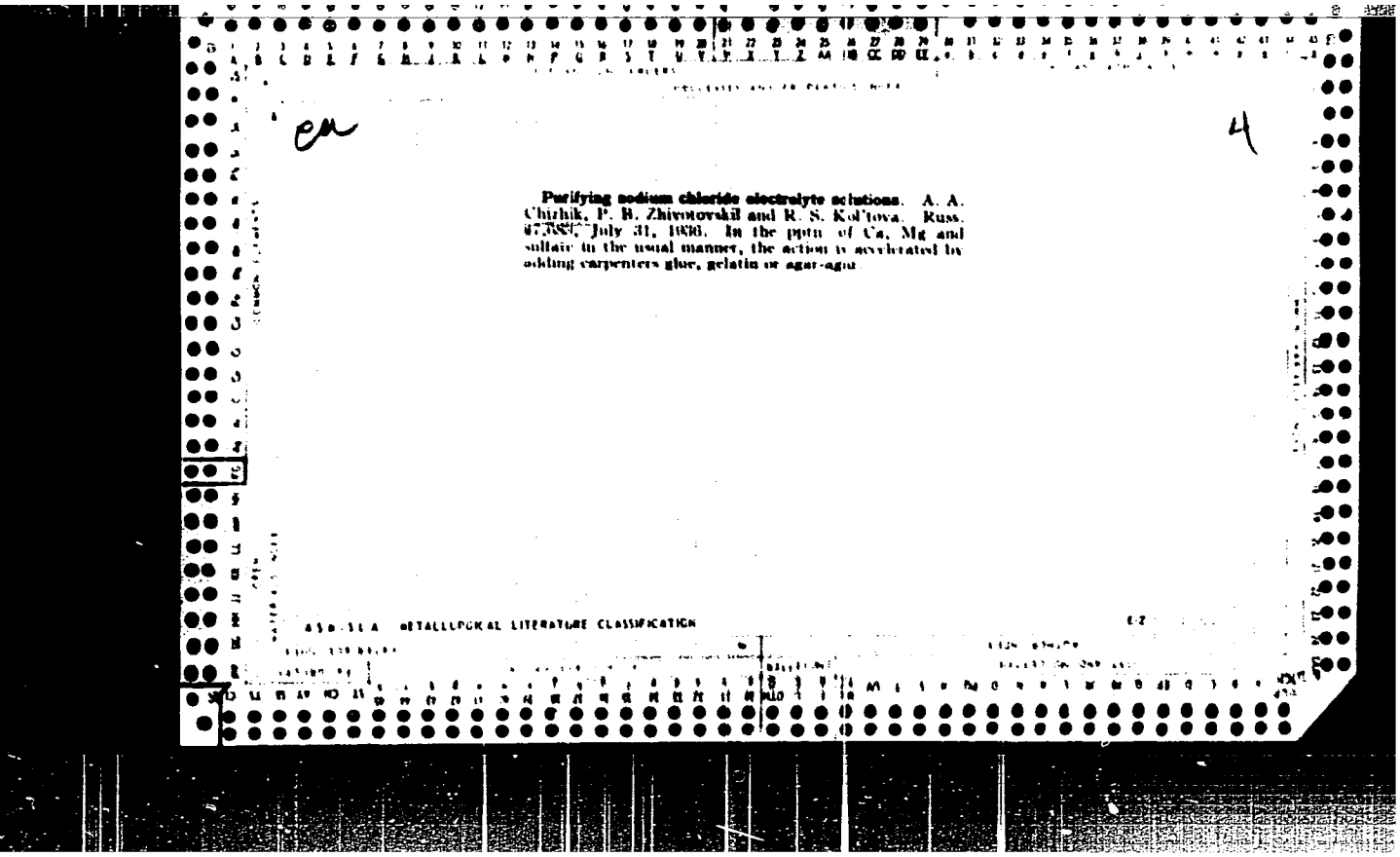
Preparation of aluminum chloride from aluminum oxide. P. P. Fedot'ev and A. A. Chizhik. *Trans. State Inst. Applied Chem.* (U. S. S. R.) No. 28, 76–86 (1934).—The preliminary action of HCl or HNO_3 on kaolin has a good effect on the distribution of Cl between Al_2O_3 and SiO_2. The amt. of acid must be at least 50% of that theoretical, calcd. on the Al_2O_3 of kaolin. It is essential to warm the kaolin and acid in mixing. V. D. Karpenko

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



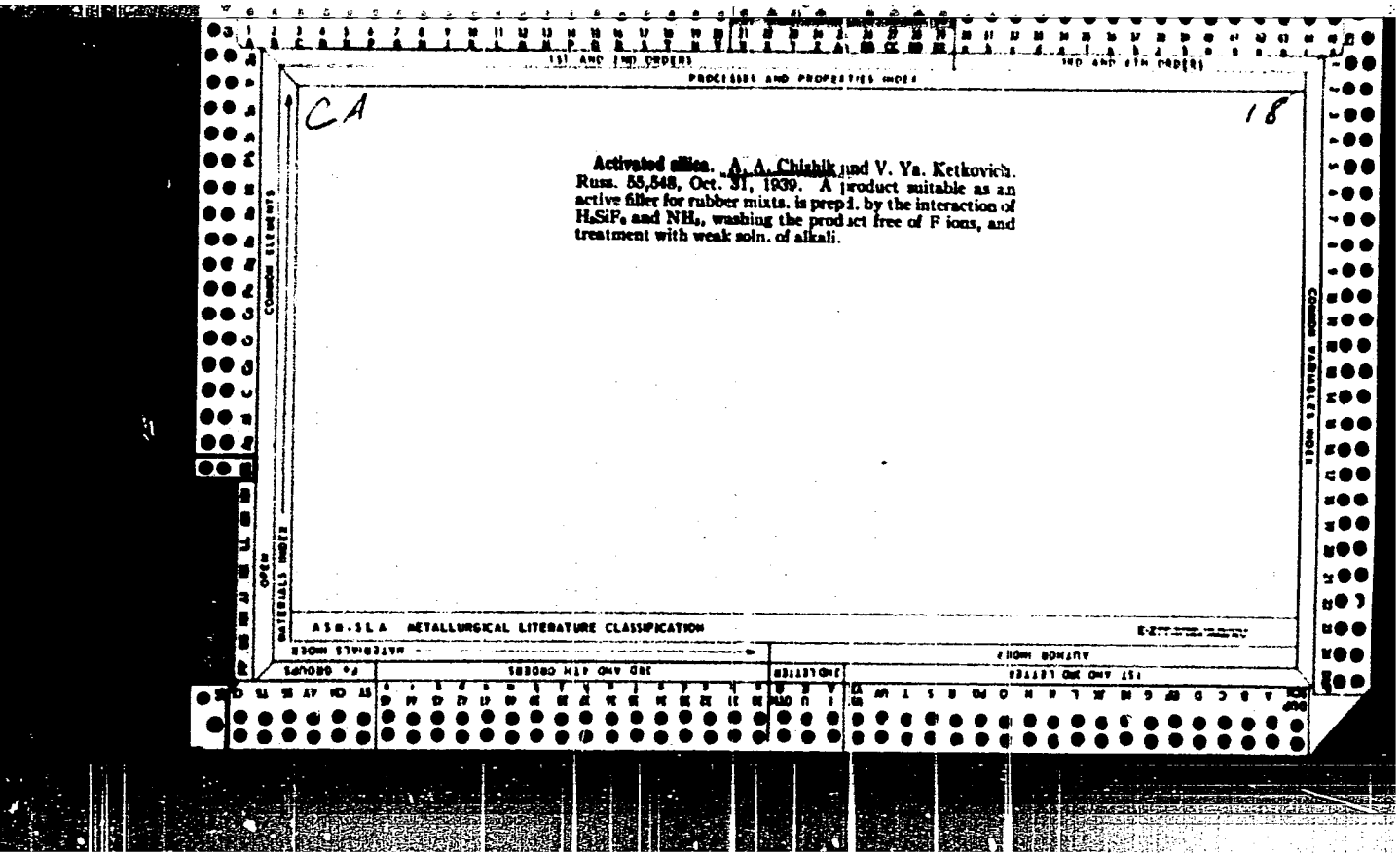
Chlorination of polymetallic ores. A. A. Chubik *Trans. Mendeleev Congr. Theor.* [illegible] *Congr.* **2**, No. 2, 246–7 (1935); *Chem. Zentr.* **1936**, I, 4055. A brief review of the treatment of oxide and sulfide ores with Cl (1) in aq. medium, (2) at about 400° and (3) in the fused state. The Cl can be recovered by electrolysis of the products of the chlorination.

M. G. Moore



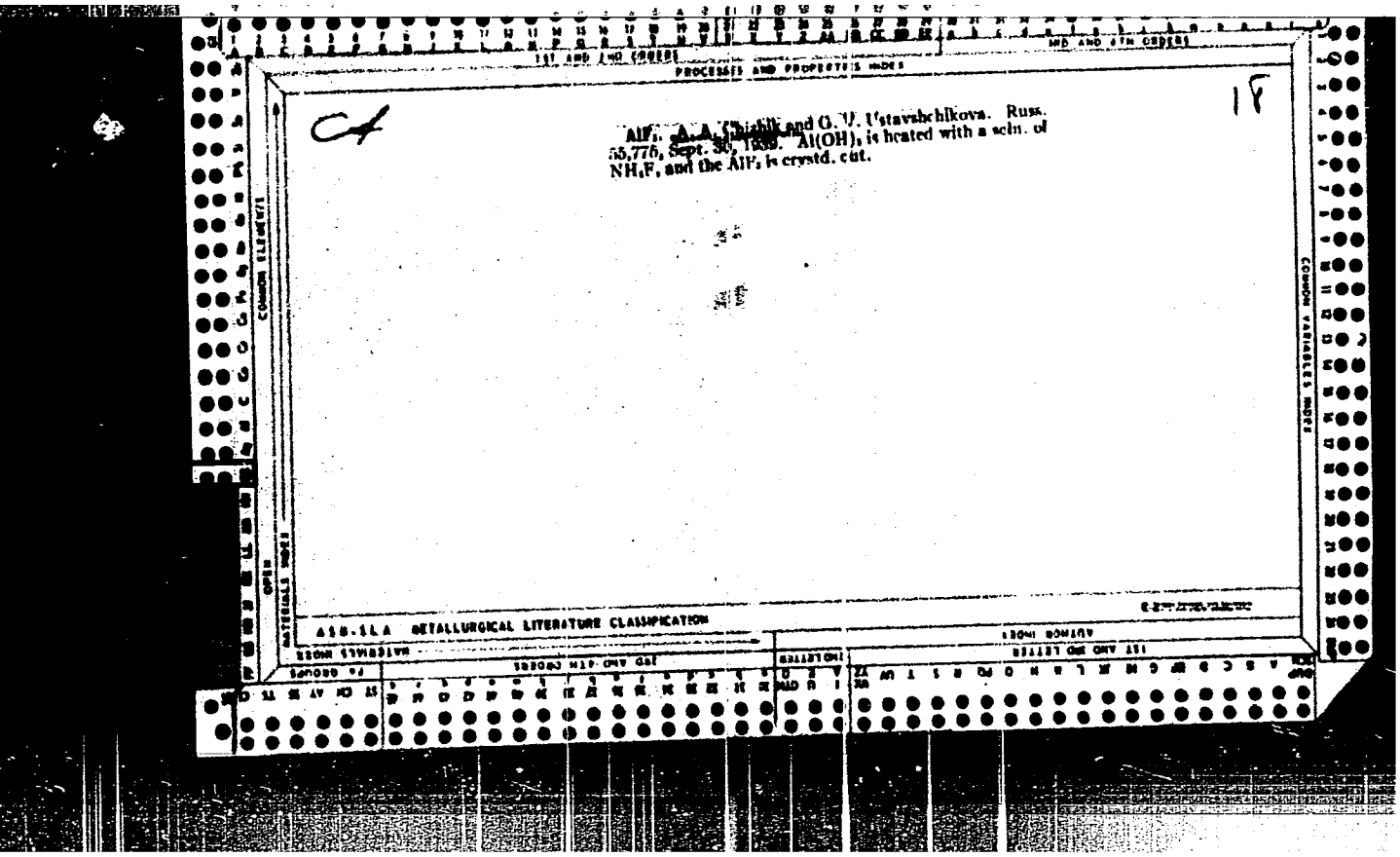
Purifying sodium chloride electrolyte solutions. A. A. Chizhik, P. B. Zhivotovskii and R. S. Kol'tova. Russ. 47,955, July 31, 1936. In the purn of Ca, Mg and sulfate in the usual manner, the action is accelerated by adding carpenters glue, gelatin or agar-agar.

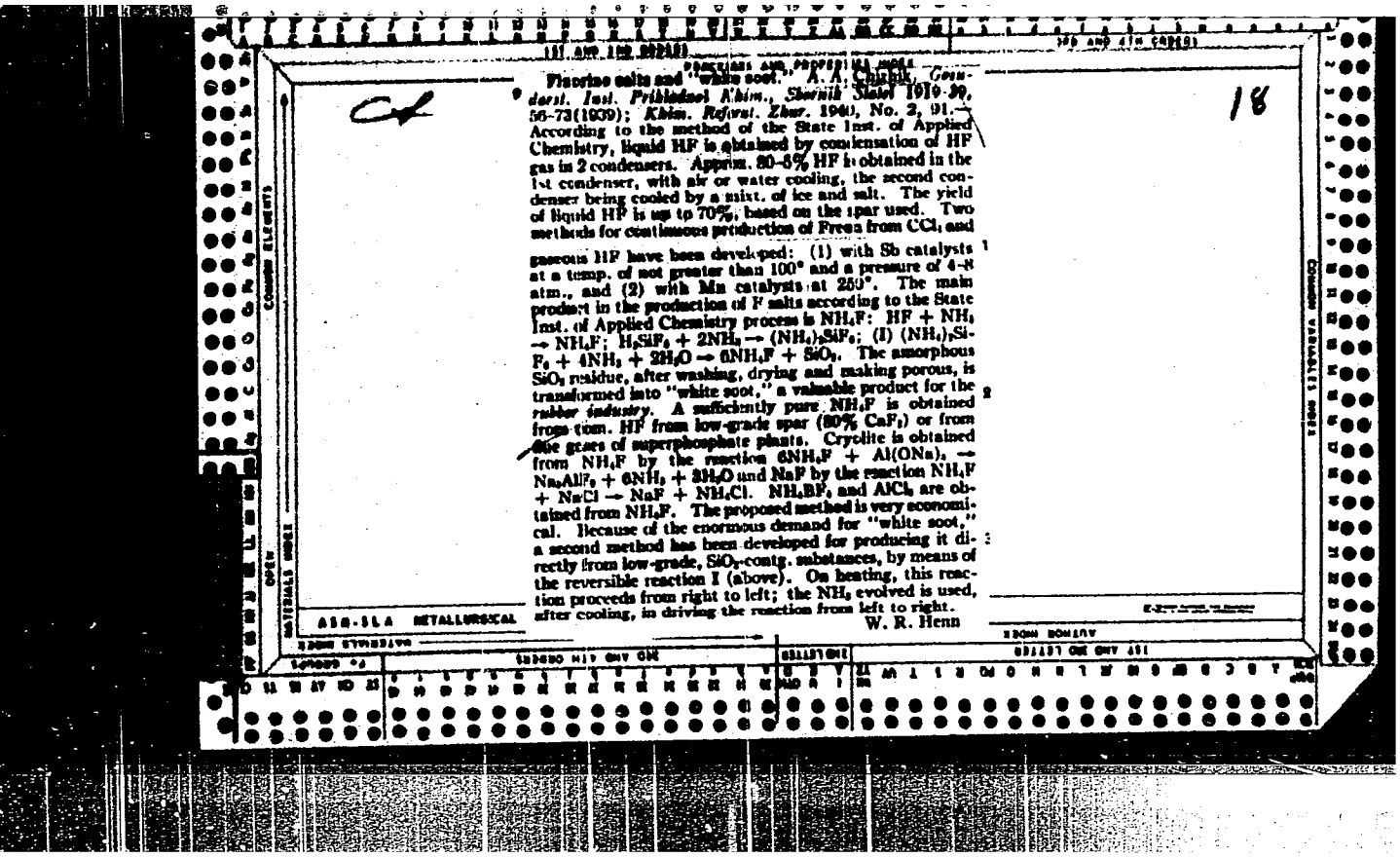
ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA 18

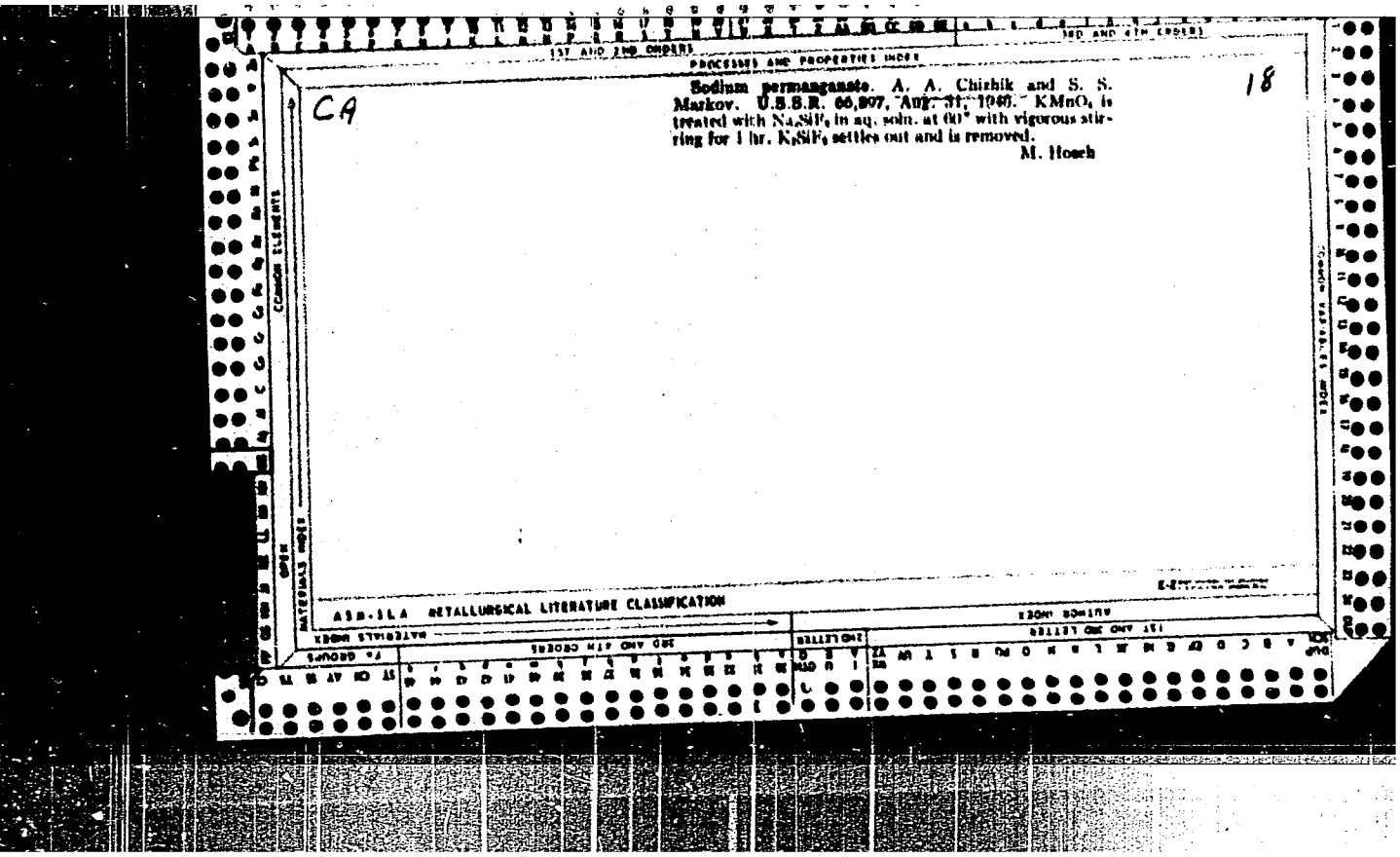
Activated silica. A. A. Chizhik and V. Ya. Ketkovich. Russ. 55,548, Oct. 31, 1939. A product suitable as an active filler for rubber mixts. is prepd. by the interaction of H_2SiF_6 and NH_3, washing the product free of F ions, and treatment with weak soln. of alkali.





Fluorine salts and "white soot." A. A. Chufarov. *Compt. Inst. Prikladnoi Khim., Sbornik Statei* 1939-39, 56-73(1939); *Khim. Referat. Zhur.* 1940, No. 2, 91.—According to the method of the State Inst. of Applied Chemistry, liquid HF is obtained by condensation of HF gas in 2 condensers. Approx. 80–85% HF is obtained in the 1st condenser, with air or water cooling, the second condenser being cooled by a mixt. of ice and salt. The yield of liquid HF is up to 70%, based on the spar used. Two methods for continuous production of Freons from CCl_4 and gaseous HF have been developed: (1) with Sb catalysts at a temp. of not greater than 100° and a pressure of 4–8 atm., and (2) with Mn catalysts at 250°. The main product in the production of F salts according to the State Inst. of Applied Chemistry process is NH_4F: $HF + NH_3 \rightarrow NH_4F$; $H_2SiF_6 + 2NH_3 \rightarrow (NH_4)_2SiF_6$; (I) $(NH_4)_2SiF_6 + 4NH_3 + 2H_2O \rightarrow 6NH_4F + SiO_2$. The amorphous SiO_2 residue, after washing, drying and making porous, is transformed into "white soot," a valuable product for the *rubber industry*. A sufficiently pure NH_4F is obtained from com. HF from low-grade spar (80% CaF_2) or from the gases of superphosphate plants. Cryolite is obtained from NH_4F by the reaction $6NH_4F + Al(ONa)_3 \rightarrow Na_3AlF_6 + 6NH_3 + 3H_2O$ and NaF by the reaction $NH_4F + NaCl \rightarrow NaF + NH_4Cl$. NH_4BF_4 and $AlCl_3$ are obtained from NH_4F. The proposed method is very economical. Because of the enormous demand for "white soot," a second method has been developed for producing it directly from low-grade, SiO_2-contg. substances, by means of the reversible reaction I (above). On heating, this reaction proceeds from right to left; the NH_3 evolved is used, after cooling, in driving the reaction from left to right.

W. R. Henn



ACCESSION NR: AP4044723

specimen loading. For most case R(t) is expressed as a power function $R = R_0 t^z$, $z < 1$, $0 < R_0$. From the theory of integral equations the lag kernel I is shown to be a function of the relaxation kernel only. Using a linear Laplace transform, the kernel I is expressed by $I(t) = \sum_{m=1}^{\infty} \frac{[R_0 \Gamma(z)]^m}{\Gamma(mz)} t^{mz-1}$

whereby an expression is obtained for C(t) and subsequently for the cumulative creep deformation $\varepsilon = A\left(1 + \sum_{m=1}^{\infty} \frac{[\Gamma(z+1) R(t)]^m}{\Gamma(mz+1)}\right)^n \sigma_0^n$

where n - creep coefficient $\approx 1/z$. The magnitude of n is then calculated for seven different types of steels and compared with experimental data. For EI612 steel primary creep curves were obtained for three stress levels. Results show satisfactory agreement with experiments. "The author is grateful to L. Ya. Liberman under whose guidance the experimental work was done." Orig. art. has: 11 equations, 2 figures, and 1 table.

ASSOCIATION: none

Card 2/3

ACCESSION NR: AP4044723

SUBMITTED: 05May63

ENCL: 00

SUB CODE: ME

NO REF SOV: 002

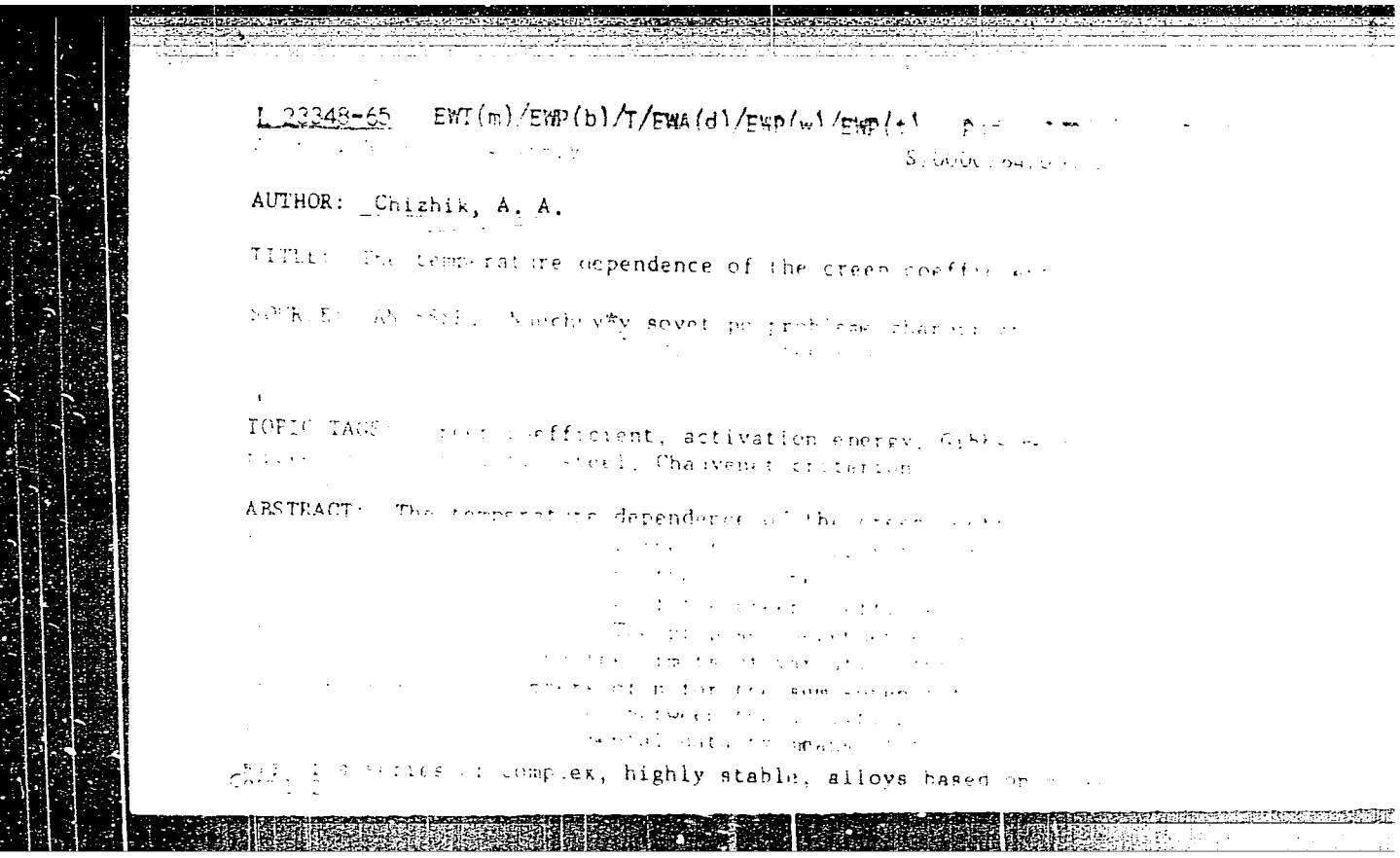
OTHER: 000

Card 3/3

STANYUKOVICH, A.V.; CHIZHIK, A.A.

High temperature testing of specimens with a spiral notch. Zav. lab. 28 no.11:1361-1367 '62. (MIRA 15:11)

1. TSentral'nyy kotloturbinnyy institut imeni I.I.Polzunova.
(Heat resistant alloys--Testing)



L 23348-65 EWT(m)/EWP(b)/T/EWA(d)/EWP(w)/EWP(t)

AUTHOR: Chizhik, A. A.

TITLE: The temperature dependence of the creep coeffi...

SOURCE: AN SSSR. Nauchnyy sovet po problem zharo...

TOPIC TAGS: ...efficient, activation energy, ... steel, Chauvenet criterion

ABSTRACT: The temperature dependence of the creep ...

...complex, highly stable, alloys based on ...

L 23348-65
ACCESSION NR: AT4046819

Card 2/2

CHIZHIK, A.A. (Leningrad)

Use of the heredity theory in a problem of the calculation of creep from data on stress relaxation. PMFT no.4:99-101 Jl-Ag '64. (MIRA 17:10)

L 21819-66 EPF(n)-2/EWA(h)/EWT(m)/T/EWA(d)/EWP(w)/EWP(t) IJP(c)
ACC NR: AT6008658 EM/WW/GS (N) JD/HW/JG/ SOURCE CODE: UR/0000/65/000/000/0147/0156

AUTHORS: Stanyukovich, A. V. (Leningrad); Chizhik, A. A. (Leningrad)

ORG: none

TITLE: The effect of various factors on the sensitivity of refractory materials to stress concentration at high temperatures

SOURCE: Vsesoyuznoye soveshchaniye po voprosam staticheskoy i dinamicheskoy prochnosti materialov i konstruktsionnykh elementov pri vysokikh i nizkikh temperaturakh, 3d. Termoprochnost' materialov i konstruktsionnykh elemento (Thermal strength of materials and construction elements); materialy soveshchaniya. Kiev, Naukova dumka, 1965, 147-156

TOPIC TAGS: stress concentration, high temperature metal, steel, alloy, pearlite steel, austenite steel, chromium steel/ EI802 chromium steel, 1Kh18N9T chromium steel

ABSTRACT: The effect of the cut geometry, temperature, and rigidity of the stressed state on the sensitivity of refractory materials to stress concentration is studied. Specimens with a spiral cut were tested (see Fig. 1). The testing method and

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10

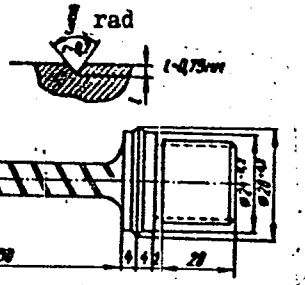


Fig. 1. Specimen with a spiral cut.

certain similar results were published earlier by the authors (Zavodskaya laboratoriya, 1962, No. 11). Samples of 12Kh1MF, 1Kh18N9T, EI10, EI612, and EI802 steels and Cr-Ni-Co and Fe-Cr-Ni-Mn alloys were tested at temperatures to 1200K (see Fig. 2).

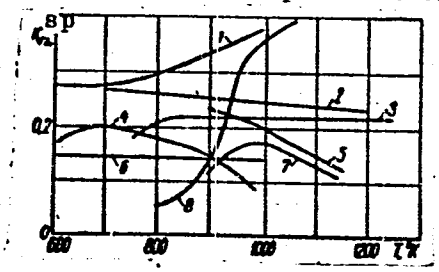


Fig. 2. Change of the coefficient of sensitivity to spiral cut with respect to plasticity k_T^{sp} as a function of temperature: 1 - 12Kh1MF; 2 - 1Kh18N9T; 3 - Cr-Ni-Co; 4 - EI10; 5 - EI612; 6 - EI802; 7 - Fe-Cr-Ni-Mn; 8 - 1Kh18N9T 18% cold-hardened.

L 21819-66
ACC NR: AT6008658

The pearlite steels showed high deformability at 823K. Chromium steel EI802 has greater workability than 1Kh18N9T, which is less plastic at high temperatures. The high-strength austenite steels showed an especially sharp reduction in plasticity with intercrystalline breakdown and the action of a concentrator. Orig. art. has: 4 formulas, 5 graphs, 1 diagram, and 1 table.

SUB CODE: 20, 11/ SUBM DATE: 19Aug65/ ORIG REF: 006

Card 3/3

S/032/62/028/011/010/015
B104/B102

AUTHORS: Stanyukovich, A. V., and Chizhik, A. A.

TITLE: Test of specimens with spiral grooves at high temperatures

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 11, 1962, 1361 - 1367

TEXT: It is suggested that the sensitivity of heat-resisting Cr-Ni-Mo alloys to stress concentrators may be estimated by determining and comparing the relative elongations δ_T of smooth specimens and of specimens having two spiral grooves (Fig. 1), stretched at constant rates (313, 0.8, and $8 \cdot 10^{-2}$ %/hr) until cracks appear, and by determining the elongation δ_p up to the moment when fracture occurs under constant load. With this in view, experiments were carried out at temperatures between 500 and 1000°C. It was found that, when the rate of deformation is reduced, the reduction in deformability attributable to the presence of a spiral groove, is similar to the reduction occasioned in smooth specimens by variations in the plasticity of the material under test: i.e., cracking is hastened as deformation is slowed. Plasticity diagrams (Fig. 5) reveal

Test of specimens with spiral...

by extrapolation that when the rate of deformation is at a minimum the minimum plastic deformation is not below 1%. Generally, the sensitivity to stress concentrators is expressed by $K_{\sigma_B} = \sigma_{B(groove)}/\sigma_{B(smooth)}$. The coefficient of sensitivity suggested here, $K_{\sigma_T} = \sigma_{T(groove)}/\sigma_{T(smooth)}$ is more distinct. The two coefficients have similar values ($K_{\sigma_T} \approx 0.2$, $K_{\sigma_B} \approx 0.6$), and are little affected by temperature between 500 and 800°C.

There are 5 figures and 2 tables.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut im. I. I. Polzunova (Central Boiler and Turbine Institute imeni I. I. Polzunov)

Fig. 1. Specimen dimensions (in mm).

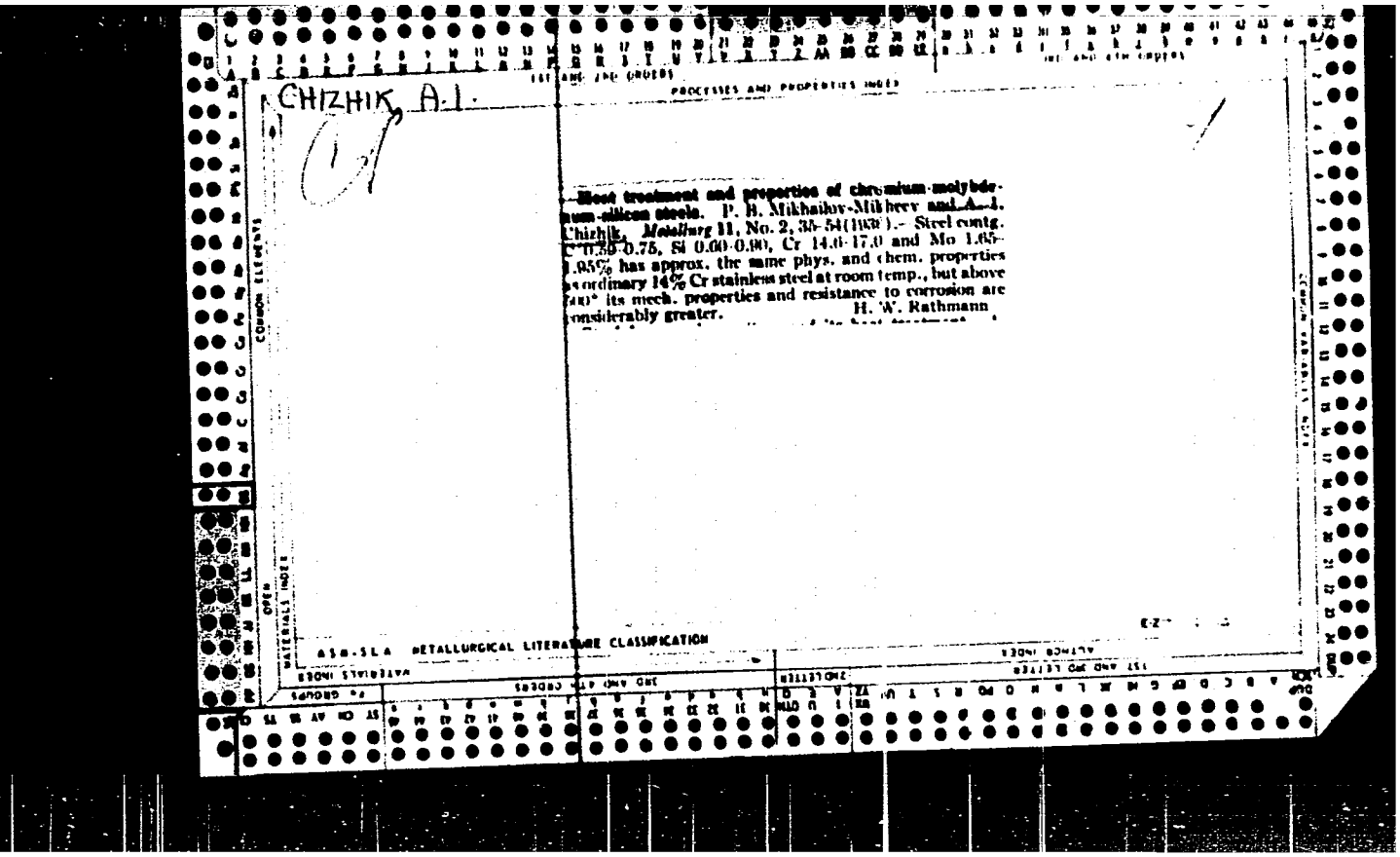
Fig. 5. Plasticity diagrams for the alloy, smooth specimens (a) and specimens with spiral groove (b).

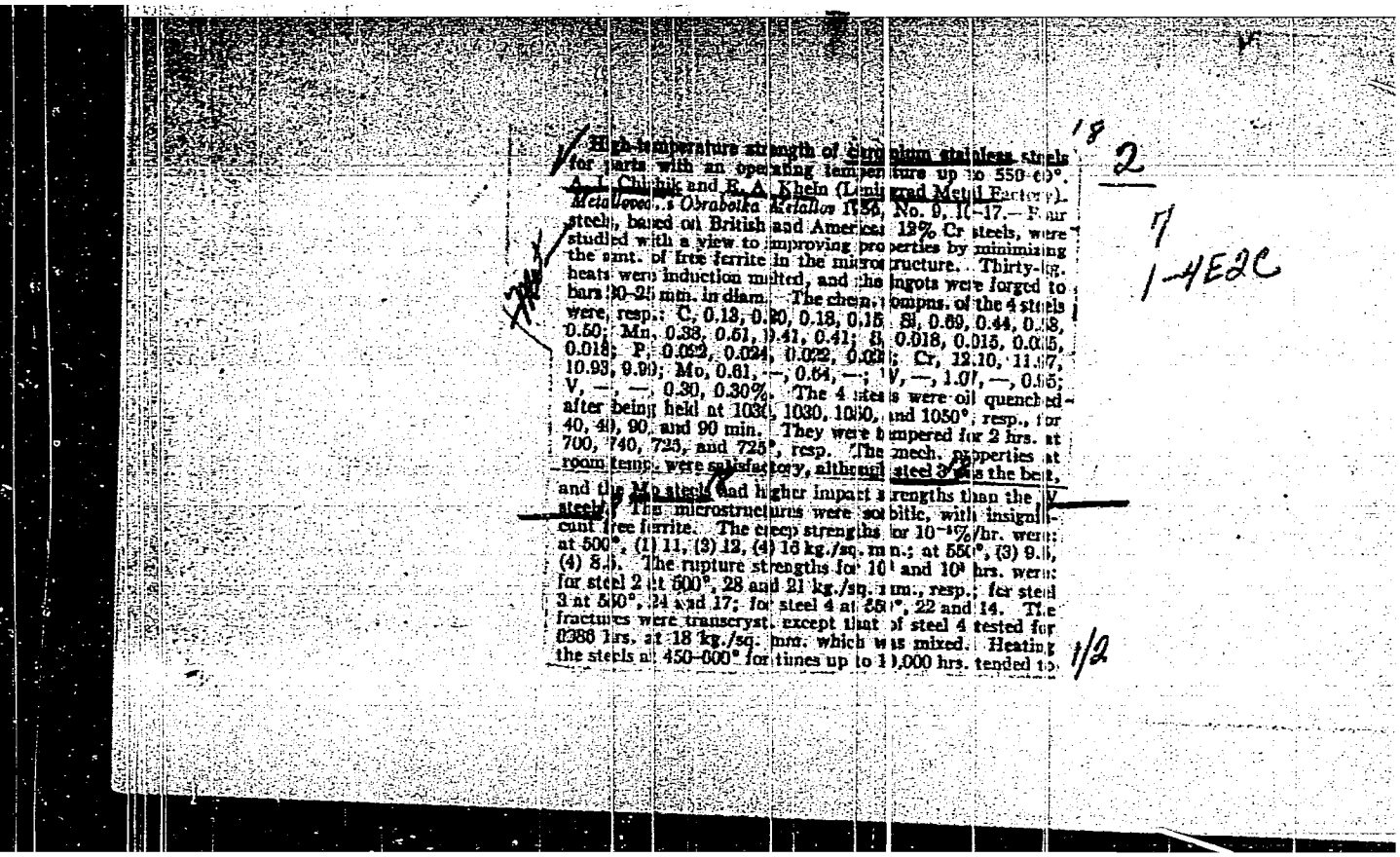
Card 2/2

CHIZHIKOV, A.G.

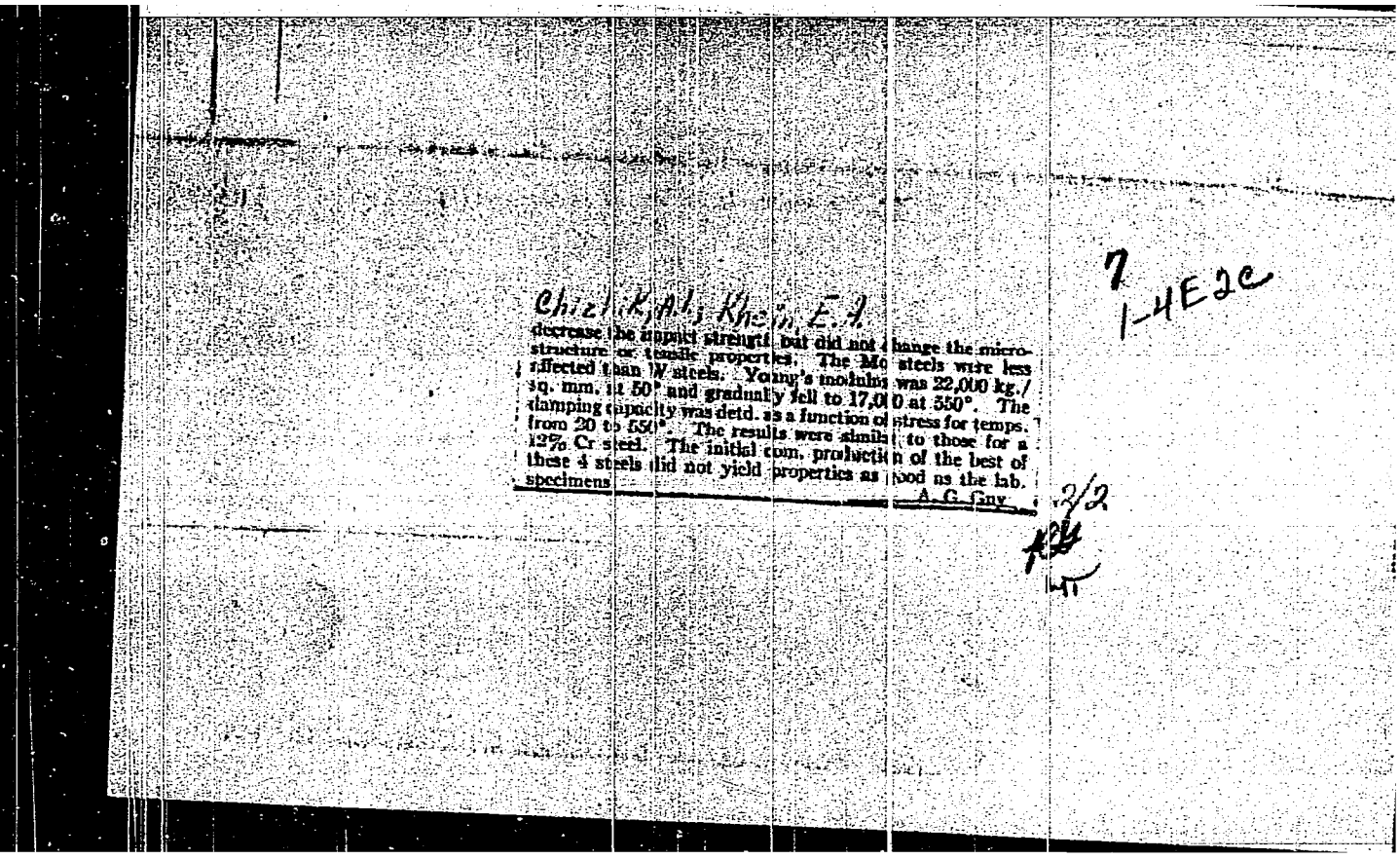
Use of the VPT-400 air preheater. Trakt. i sel'khozmash. no.12:39 D '65. (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mekhanizatsii sel'skogo khozyaystva.





High-temperature strength of [illegible] stainless steels for parts with an operating temperature up to 550-600°. A. I. Chichik and B. A. Klein (Limit'nyi Metall Factory). *Metallovedenie i Obrabotka Metallov* 1956, No. 9, 10–17.— Four steels, based on British and American 12% Cr steels, were studied with a view to improving properties by minimising the amt. of free ferrite in the microstructure. Thirty-kg. heats were induction melted, and the ingots were forged to bars 20–25 mm. in diam. The chem. compns. of the 4 steels were, resp.: C, 0.13, 0.20, 0.18, 0.15; Si, 0.69, 0.44, 0.38, 0.50; Mn, 0.38, 0.61, 0.41, 0.41; S, 0.018, 0.015, 0.015, 0.018; P, 0.022, 0.024, 0.022, 0.023; Cr, 12.10, 11.07, 10.93, 9.90; Mo, 0.61, —, 0.64, —; W, —, 1.07, —, 0.65; V, —, —, 0.30, 0.30%. The 4 steels were oil quenched after being held at 1030, 1030, 1030, and 1050°, resp., for 40, 40, 90, and 90 min. They were tempered for 2 hrs. at 700, 740, 725, and 725°, resp. The mech. properties at room temp. were satisfactory, although steel 3 was the best, and the Mo steels had higher impact strengths than the V steels. The microstructures were sorbitic, with insignificant free ferrite. The creep strengths for 10^{-4}%/hr. were: at 500°, (1) 11, (2) 12, (4) 16 kg./sq. mm.; at 550°, (3) 9.5, (4) 8.5. The rupture strengths for 10^3 and 10^4 hrs. were: for steel 2 at 500°, 28 and 21 kg./sq. mm., resp.; for steel 3 at 550°, 24 and 17; for steel 4 at 550°, 22 and 14. The fractures were transcryst. except that of steel 4 tested for 9386 hrs. at 18 kg./sq. mm. which was mixed. Heating the steels at 450–600° for times up to 10,000 hrs. tended to



Chizhik, A.I., Khazin, E.I.

decrease the impact strength but did not change the micro-structure or tensile properties. The Mo steels were less affected than W steels. Young's modulus was 22,000 kg./sq. mm. at 50° and gradually fell to 17,000 at 550°. The clamping capacity was detd. as a function of stress for temps. from 20 to 550°. The results were similar to those for a 12% Cr steel. The initial com. production of the best of these 4 steels did not yield properties as good as the lab. specimens.

A. G. Guy

7
1-4E2c

3/2

CHIZHIK, A. I.,

"Scientific Research on Turbine Materials," Technological Developments at the Leningrad Metal Works imeni Stalin, Moscow, Mashgiz, 1957. p. 260.

CHIZHIK, A.I.

114-11-5/10

AUTHOR: Glikman, L.A., Doctor of Technical Sciences, Stanyukovich, A.V., Candidate of Technical Sciences and Chizhik, A.I., Engineer.

TITLE: Heat-resistant Materials for Power Machinery Building. (Zharoprochnyye materiyaly dlya energomashinostroyeniya)

PERIODICAL: Energomashinostroyeniye, 1957, Vol.3, No.11, pp. 22 - 26 (USSR)

ABSTRACT: The article commences with a statement of the importance of studying mechanical properties of metals at high temperatures and with a review of early work on this subject in the USSR.

After the war, work developed extensively on the study of the properties of heat-resistant materials. New laboratories for this purpose were set up in the Central Scientific Research Institute of Engineering Technology (TsNIITMASh), the Central Scientific Research Institute for Ferrous Metallurgy (TsNIIChERMET at the Neva Works imeni Lenin (NZL), the Kharkov Turbine Works (KhTZ) and elsewhere and the laboratories at the Central Boiler Turbine Institute (TsKTI) and the Leningrad Metal Works (LMZ) were extended. In the solution of metallurgical problems involved in the manufacture of new heat-resistant materials, a leading part has been played by such enterprises as "Elektrostal", the Ural Engineering Works (Uralmashzavod), the Neva Works

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Heat-resistant Materials for Power Machinery Building.

imeni Lenin, the New Kramatorsk Engineering Works (NKMZ) and others.

A detailed study was made of the kinetics of failure over a long time and of the kinetics of structural changes in the properties of materials exposed to high temperatures for a long time. As a result of this work it was possible to draw up a number of analytical relationships. An example is given of such a relationship between the long-term ultimate strength of heat-resistant steel and the temperature. This formula includes a coefficient which varies greatly from one steel to another and appropriate values may be taken from the graph given in Fig.1. The accumulation of test data on long term failure made it possible to develop the general view of the changes that take place in plastic properties at high temperatures as a function of the mean rate of creep and time to failure. It was shown that the development of inter-crystalline failure with a reduction in the rate of creep or with increase in the test time leads to the appearance of a range of rates of creep in which there is a marked reduction in the plasticity and increase in the brittleness. Changes in the plastic properties of a number of steels as a function of the mean rate of creep are shown in Fig. 2.

Card 2/7 Work on heat-resistance carried out in the Central Boiler

Heat-resistant Materials for Power Machinery Building.

Turbine Institute and at Leningrad University resulted in the derivation of a relationship between the quantity of metal reacting with oxygen and the time. A great deal of work was done on the ageing of high alloy steel by study of the structure and properties of a group of steels after lengthy exposure to high temperature. It was shown that, for a number of materials, identical structures can be obtained at different ageing temperatures by altering the test time. For many materials, the structural condition can be related to the impact strength. This is very useful in maintenance work. Procedures have been developed for studying the fatigue strength at high temperatures.

Recently, more attention has been paid to physical methods of investigation, such as determination of thermal conductivity and temperature coefficient of expansion.

Experimental results on creep in pipes under pressure have been compared with results of the usual tension tests and a method has been developed for calculating the equivalent stress in pipes under pressure from the results of tests on ordinary specimens that is applicable to all boiler steels (see Fig.5).

The development of the first boilers and turbines for super-high steam conditions provided a great stimulus to the investigation of heat-resistant materials. Examples of heat-resistant

Heat-resistant Materials for Power Machinery Building. 114-11-5/10

materials which have been developed and investigated in detail and which have found wide application in power engineering are listed in a table. The table lists 16 brands of steel and for each gives the heat treatment, the test temperature, the mechanical properties, the creep limit and the long-term ultimate strength.

In the article special mention is made of certain steels. Steel P-2 is widely used for forged rotors. Another heat-resistant rotor material is chrome-tungsten-molybdenum steel ЭИ- 415 which has high structural stability.

An important pearlitic steel for casting is brand 20ХМФЛ which is used at operating temperatures of up to 540 °C. Use is now beginning to be made of a new cast-chrome-molybdenum-vanadium steel 15Х1М1Ф which can be recommended for parts operating at temperatures up to 570 °C. A series of new pearlitic steels has been developed for super-heater tubes and steam pipes. Steel 12ХМФ intended for operation at temperatures of up to 570 °C is an example and so are steels ЭИ-531 and ЭИ-454. A major task at the present time is to extend the use of cheaper steels with favourable technological properties. Work is being carried out on the development of new steels. Particularly interesting results have been obtained with materials based on stainless 12% chromium steel which also contains such elements as molybdenum,

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Heat-resistant Materials for Power Machinery Building.

tungsten, vanadium and niobium to a total content of 1-3%. These steels are used after heat treatment. Steels of this kind are 15Х11МФ, 15Х12ВМФ and 1Х12В2МФ. Variants of cast-chromium heat-resistant steels are of considerable interest; materials of these kinds are steels Х11ЛБ and Х11ЛА.

Since the war, investigational work and developments in metallurgical work on casting and forging have led to the development of a series of heat-resisting austenitic steels. One of the first of these which has been studied in the most detail is steel ЭИ-405 which has satisfactory technological properties and sufficiently high heat-resistance to combine with good structural stability. It has been used for the manufacture of blades and a number of other parts of turbines for super-high steam conditions and for gas turbines. During development work on the welded rotor for a gas turbine several large parts were made from this steel using different manufacturing procedures. The parts were subsequently tested at the Leningrad Metal Works and the Central Boiler Turbine Institute and it was found necessary to improve the quality of ingots and the technology of hot working. A good deal of work was done on the welding of this steel.

Steel ЭИ-572 has been manufactured and rolled by the "Elektro-
Card5/7stal" Works and investigated in detail by the Central Boiler

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Turbine Institute. It has a high relaxation stability and low sensitivity to the presence of cuts so that it is very suitable for the manufacture of studs and bolts intended to operate at temperatures of up to 580 °C, and also for large forgings for gas turbine discs and rotors.

Steel ЭИ-612, a chrome-nickel austenitic steel alloyed with tungsten and titanium, has been developed. It has good mechanical properties in the temperature range 20 - 650 °C. The impact strength is maintained at a high value after prolonged ageing at 650 - 700 °C.

A great deal of work has been done on the development and use of cast austenitic steel. One such steel is brand ЛА1 which has high heat-resistance and stability so that it can be used at working temperatures of up to 650 °C. Considerable difficulties had to be overcome in the manufacture of castings of heat-resistant austenitic steels because of their tendency to form films, which leads to the formation of various defects on the surface of the ingots. These defects are found in all existing austenitic heat-resistant steels. Reliable welds can be made of these steels only in regions from which such defects and porosity are completely absent. A good deal of work has been done on cast austenitic steel Х25Н13Т-Л which has been used for

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Heat-resistant Materials for Power Machinery Building.

the manufacture of gas turbine forgings. In addition to chromium and nickel, this austenitic steel is alloyed only with titanium, it has a high heat-resistance and is easier to work than the steels mentioned previously. It has been found to be of good stability at high temperature.
There are 5 figures and 1 table.

AVAILABLE: Library of Congress

Card 7/7

CHIZHIK, A.I.

AUTHOR: Chizhik, A. I., Engineer. 129-11-5/7

TITLE: On the Work of the Leningrad Metal Works imeni Stalin in the Field of Turbine Materials. (O rabote Leningradskogo Metallicheskogo Zavoda imeni Stalina v oblasti turbinnykh materialov).

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1957, No.11, pp.66-71 (USSR)

ABSTRACT: A brief review is given of the results of research work carried out by the Central Laboratory of the Leningrad Metal Works imeni Stalin, which is one of the leading Soviet undertakings in the design and manufacture of large stationary steam, gas and hydraulic turbines. The review covers the pre-war as well as the post-war period. The search for new high temperature materials has gained a considerable impetus in view of the fact that in 1951 and 1952 these Works produced the first, type ЛМЗ-150, 150 000 kW super-high pressure turbine with a live steam temperature of 550°C in front of the turbine, the stationary ГТ-12-3 gas turbine with a gas temperature of 650°C and a series of other new turbines with high and super-high steam parameters. Development of materials for these machines required major research and experimental work which was

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On the Work of the Leningrad Metal Works imeni Stalin in the Field of Turbine Materials.

carried out by TsNIITMASh, TsKTI imeni Polzunov and the laboratory of the Works. Of the recently developed steels the author mentions the steel P2 which is being used for the rotors of 150 000 kW turbines and also for rotors and other components of new high and super-high pressure turbines; this steel has a satisfactory relaxation stability at temperatures up to 540°C. It was found that there is a definite relation between creep resistance and the total content of Mo + W expressed in atomic percent in the case of Cr-W-V containing about 0.25% C, 1.5% Cr and 0.25% V. In the case of normalisation annealing with subsequent high temperature tempering, the best creep resistance was obtained for steels containing about 0.5 at.% of Mo + W. For turbine blades the laboratory of the Works developed the austenitic steel ЭИ405 containing 16% Cr and 13% Ni, about 2% Mo and also niobium; this steel was developed primarily for the blades of the first stages of turbines with super-high steam parameters and has very good heat resistance and corrosion properties. Two stainless high temperature steels were developed between 1951 and 195[illegible]:

Card 2/4 15Х11МФ (0.15% C, 11% Cr, 0.7% Mo, 0.35% V) and 15Х11БФ

On the Work of the Leningrad Metal Works imeni Stalin in the Field of Turbine Materials.

which possess a high degree of heat resistance and are suitable for temperatures up to 560°C. Methods of investigation worked out in the laboratory of these Works are also briefly reviewed. In 1939 a technique and electronic equipment were developed for determining the elastic constants of metals at normal and at elevated temperatures; it was described fully in 1948 by Pisarevskiy, M.M. (Ref.13). In 1950 a technique was developed of studying the internal friction in metals utilising the method of longitudinal oscillations of small amplitude which are electrostatically generated in the tested specimen (Ref.14); this method is also applicable for determining the modulus of elasticity. In 1952 special test equipment was built for studying the damping decrement in metals at normal and at elevated temperatures and for the case of high cyclic stresses; it incorporates photo-electric recording equipment (Ref.15). Of great interest is the information obtained in studying the influence of chromating and nitriding on the damping decrement of certain turbine steels (Ref.17). Chromating increases the damping ability only at normal temperatures; nitriding

On the Work of the Leningrad Metal Works imeni Stalin in the Field of Turbine Materials.

reduces the damping ability of steels of the pearlitic class and increases it for steels of the austenitic class (Ref.17). The Works' laboratory also developed a number of methods for testing and checking finish manufactured components; these are only enumerated, without giving details. Furthermore, the work of the Leningrad Metal Works in the field of machining and heat treatment is briefly mentioned.
There are 27 Slavic references.

ASSOCIATION: Leningrad Metal Works imeni Stalin. (Leningradskiy Metallicheskiy Zavod imeni Stalina).

AVAILABLE: Library of Congress

CHIZHIK, A. I.

AUTHOR: Chizhik, A. I., Director of the Central Laboratory of the Leningrad Metal Products Plant, imeni I.V. Stalin 32-1o-32/32

TITLE: Comments

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol 23, Nr 1o, pp 1269-1271 (USSR)

ABSTRACT: In his report delivered on the occasion of the 4oth anniversary of the October revolution, the author in his introduction describes the past history of the development of gas-and steam- turbines in the USSR by mentioning a series of respective works of Soviet scientists in the field of the refractoriness of materials, of thermodynamic and physical investigations of metals and alloys and of the construction of testing machines with respect to the ability of gliding, fatigue of metals at high temperatures, etc. The most up-to-date among them are called here: "ЦКТИ-5", "ИП-2, "ИП-4М and "Я-8" which were at last elaborated by the Central Institute of Scientific Research in the field of technology and machine building (ЦНИИТМАШ). The author declares that the investigation works of Soviet scientists who deal with the permanent effects of high temperatures on the metals (Gulyayev, A. P., Popova, N. M. and Lashko, N. F.) and those who deal with the methods of analysis of the carbide-phase in stell (differential analysis of carbide) are of particular importance. The works dealing with the application of radiographic, local spectroscopic- and

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Comments

micro-radiospectroscopic analysis, as well as the vacuum- and electron microscopy are of equal importance. Great success were achieved in the USSR in the field of defectoscopy, which is of great importance in turbine-construction. Among these successes are: X-ray (radiographic), gamma-, magnetic, luminiscence-, and color-defectoscopy, as well as ultrasonic control (defectoscopes: "УЗД-12" and "УЗД -7Н").The antiquated method of cutting the rings for determining the final voltage with turbines and generators, was at last replaced by a new method of resistance wire-indicators.Priority is given to the spectroscopic analysis (70%) in the afore-mentioned industrial branch of the USSR. The next important tasks, the author says, are:full automation of the testing equipments, new constructions of the testing machines for relaxation-voltages, more precise determinations of the characteristics of the refractoriness of certain metals, and alloys with respect to various conditions(tensile stress at high temperature, permanent destruction,etc.).Finally, the author states,the permanent lack of outfits in work-laboratories,like those of vacuum-metallography,local X-ray spectroscopic analysis, and others,must be remedied in order to achieve a smooth operation of the Soviet industrial enterprises.The successes achieved which are mentioned here are the best prerequisite,the author states,that all future problems will be solved.

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Comments 32-lo-32/32

ASSOCIATION: Tsentral'naya Laboratoriya Leningradskogo metallicheskogo zavoda im. I.V. Stalina (Central Laboratory of the Leningrad Metal Products Plant)

AVAILABLE: Library of Congress

Card 3/3 1. Science-USSR-Progress 2. Gas turbines 3. Steam turbines 4. Refractory materials

25(0) SOV/32-25-1-4/51

AUTHOR: Chizhik, A. I., Chief of the Central Factory Laboratory of the Leningrad Metal Factory imeni Stalin

TITLE: Articles and Suggestions of the Directors of Central Factory Laboratories in Connection With the Theses Laid Down by Party Member N. S. Khrushchev at the XXI Congress of the CPSU "Control Figures of the Development of National Economy of the USSR in the Years 1959-1965" (Stat'i i predlozheniya rukovoditeley Tsentral'nykh zavodskikh laboratoriy v svyazi s tezisami doklada tovarishcha N. S. Khrushcheva na XXI s"yezde KPSS "Kontrol'nyye tsifry razvitiya narodnogo khozyaystva SSSR na 1959-1965 gg.")

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 1, pp 8-9 (USSR)

ABSTRACT: Heat-resisting materials tested in the above mentioned laboratory were employed for the construction of new steam turbine parts (e.g. turbine rotor, disk and blades, etc.). Other complicated technical problems in this field were also solved at the Ural'skiy zavod tyazhelogo mashinostroyeniya (Ural Heavy Machinery Building Plant), Nevskiy zavod im. Lenina (Neva Factory imeni Lenin), Novo-Kramatorskiy zavod im. Stalina (Novo-Kramatorsk Factory imeni Stalin), zavod

Card 1/2

Articles and Suggestions of the Directors of Central Factory Laboratories in Connection With the Theses Laid Down by Party Member N. S. Khrushchev at the XXI Congress of the CPSU "Control Figures of the Development of National Economy of the USSR in the Years 1959-1965"

"Elektrostal'" ("Elektrostal'" Factory), and other plants. The majority of the problems was worked out in collaboration with the scientific research institutes(TsNIITMASh, TsKTI). It is pointed out that those factories possessing central construction bureaus and working out new machine types independently, such as the Leningrad Metal Factory which is going to construct a number of new powerful steam turbines in the course of next year, should by all means be equipped with laboratories corresponding to those of the scientific research institutes. The latter should be chiefly concerned with research work , and with scientific and technical problems determining the further development of the respective industrial branches.

ASSOCIATION: Tsentral'naya zavodskaya laboratoriya Leningradskogo metallicheskogo zavoda im. Stalina (Central Factory Laboratory of the Leningrad Metal Plant imeni Stalin)

BELOV, N.Ya.; ASSONOV, A.D.; CHIZHIK, A.I.; ZAMOTAYEV, S.P.; BUTOMO, D.G.; SERGEYEV, L.N.; rukovoditel' issledovatel'skoy gruppy; MASUROVA, A.I.; SHUBIN, G.N.; NOVIK, A.A.; PODSHIVALOV, R.N.; ALEKSO, A.I.; KUZ'MINA, L.I.; KORF, D.M.; KOZACHENKO, N.S.

Articles and suggestions of supervisors of central industrial laboratories. Zav. lab. 25 no.1:5-22 '59. (MIRA 12:1)

1.Nachal'nik TSentral'noy zavodskoy labotarorii Kirovskogo mashinostroitel'nogo zavoda (for Belov). 2.Glavnyy metallurg Avtozavoda imeni Likhacheva (for Assonov). 3.Nachal'nik TSentral'noy zavodskoy laboratorii Leningradskogo metallicheskogo zavoda imeni Stalina (for Chizhik). 4.Nachal'nik TSentral'noy zavodskoy laboratorii Uralmashzavoda, g. Sverdlovsk (for Zamotayev). 5.Nachal'nik TSentral'noy laboratorii zavoda "Krasnyy Vyborzhets" (for Butome). 6.Laboratoriya zavoda "Krasnyy Vyborzhets" (for Sergeyev). 7.Nachal'nik khimicheskoy laboratorii metallurgicheskogo zavoda imeni Petrovskogo (for Masurova). 8.Nachal'nik TSentral'noy laboratorii Verkh-Isetskogo metallurgicheskogo zavoda (for Shubin). 9.Zamestitel' nachal'nika TSentral'noy zavodskoy laboratorii zavoda imeni Malysheva, g. Khar'kov (for Novik). 10.Zamestitel' nachal'nika TSentral'noy zavodskoy laboratorii Sverdlovskogo turbomotornogo zavoda (for Podshivalov). 11.Nachal'nik eksperimental'nogo otdela Spetsial'nogo konstruktorskogo byuro Sverdlovskogo turbomotornogo zavoda (for Alekso). 12.Nachal'nik TSentral'noy laboratorii Okhtinskogo khimicheskogo kombinata (for Kuz'mina). 13.Nachal'nik TSentral'noy laboratorii zavoda "Krasnyy khimik" (for Korf). 14.Nachal'nik TSentral'noy zavodskoy laboratorii Kiyevskogo mashinostroitel'nogo zavoda "Bol'shevik" (for Kozachenko).

(Chemical engineering laboratories)(Testing laboratories)

CHIZHIK, A.I., inzh.

Heat-resistant steel for steam turbine rotors. Trudy LMZ no.9:7-25 '62. (MIRA 16:6)

(Steel, Heat-resistant)
(Steam turbines—Design and construction) (Impellers)

CHIZHIK, A.I., inzh.; KHEYN, Ye.A.

Investigating regular R2 steel rotors. Trudy LMZ no.9:26-36 '62. (MIRA 16:6)

(Impellers—Testing) (Steel, Heat-resistant—Testing)

CHIZHIK, A.I., inzh.; KHEYN, Ye.A.

Properties of industrial blands of 15Kh11MF and 15Kh11VF blade steels. Trudy LMZ no.9:46-59 '62. (MIRA 16:6)
(Chromium steel--Testing)

CHIZHIK, A.I., inzh.; ZHAKOVSKAYA, I.S., inzh.

High chromium heat-resistant steel for cast and forged steam turbine parts with an operating temperature of up to 580 .
Trudy LMZ no.9:70-88 '62. (MIRA 16:6)
(Steam turbines--Design and construction)
(Steel, Heat-resistant--Testing)

CHIZHIK, A. K.

Chizhik, A. K.

"The fish of the Karlovskiy feservoir." Min Higher Education Ukrainian SSR. Kiev State U imeni T. G. Shevchenko. Kiev, 1956. (Dissertation for the Degree of Candidate in Biological Sciences.)

So: Knizhnaya letopis'
No. 25, 1956. Moscow

CHIZHIK, D.A., inzh.; LACHINOVA, T.Ya., inzh.

Portable transformer substation in the construction of mines. Shakht. stroi. 5 no.4:26-28 Ap '61. (MIRA 14:5)

1. Giproorgshakhtostroy (Karaganda).
(Electric substations) (Mine building)

CHIZHIK, G.V.

Results of a survey of pharmacies in Odessa Province. Apt.delo 7 no.6:31-32 N-D '58 (MIRA 11:12)
(ODESSA PROVINCE--PHARMACY)

CHIZHIK

RAZUMOVSKAYA, Z.G., professor, redaktor; LOY'TSYANSKAYA, M.S.; CHIZHIK, G.Ya.; MITYUSHOVA, N.M.; MEL'NIKOVA, G.G., redaktor; IVANOV, V.V., tekhnicheskiy redaktor.

[Manual on laboratory work on microbiology] Rukovodstvo k laboratornym zaniatiiam po mikrobiologii. [Leningrad] Izd-vo Leningradskogo universiteta, 1955. 68 p. (MLRA 8:12)
(Microbiological laboratories)

CHIZHIK, G.Ya.

Butyric acid bacteria isolated from silage. Uch.zap.Len.un. 186: 241-255 '55. (MLRA 9:8)
(Clostridium butyricum) (Ensilage)

CHIZHIK, G. Ya.

USSR/Microbiology - Industrial Microbiology. F-3

Abs Jour : Ref Zhur - Biol., No 4, 1958, 14747

Author : Chizhik, G.Ya.
Inst :
Title : Significance of Aerobic Microflora in Promoting Butyric Fermentation in Ensilage.

Orig Pub : Uch. zap. GPU, 1956, No 216, 104-119

Abstract : Under conditions of loose loading and common introduction of pure cultures of Clostridium butyricum isolated from ensilage and aerobes Bacillus subtilis, Bacterium coli, Bact. fluorescens and Pseudomonas herbicola, and increased content of butyric acid and a small increase of ammoniacal nitrogen was found in laboratory clover ensilage. In the same variant for corn ensilage, an insignificant accumulation of butyric acid and an increased accumulation of ammoniacal nitrogen was noted. In a common cultivation with aerobes-- bacteria, yeast and mold fungi-- on

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Card 2/2

CHIZHIK G.Ya.

USSR/Microbiology - General Microbiology. F-1

Abs Jour : Ref Zhur - Biol., No 4, 1958, 14688

Author : Chizhik, G.Ya., Sidorova, S.F.
Inst : -
Title : Effect of Orange Acridine on Tuberous Bacteria.

Orig Pub : Uch. zap. GPU, 1956, No 216, 211-217

Abstract : The fluorescent dye, orange acridine (I), in concentrations of 1:1000-1:20,000 causes destruction of a considerable percentage of tuberous bacteria. A portion of fluorochromated cells illuminated green are incapable of further multiplication. Different strains of tuberous bacteria are distinguished by variable resistance to (I). In utilizing (I) for determination of live and dead cells, the dye should be used in concentrations not higher than 1:30,000.

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CHIZHIK, G.Ya.

Structure of nodule bacteria [with summary in English]. Mikrobiologiia 28 no.1:28-33 Ja-F '59. (MIRA 12:3)

1. Kafedra mikrobiologii Leningradskogo gosudarstvennogo universiteta imeni A.A. Zhdanova.
(BACTERIA,
root nodule bact., structure (Rus))

RAZUMOVSKAYA, Zinaida Georgiyevna, prof.; CHIZHIK, Genovefa Yakovlevna; GROMOV, Boris Vasil'yevich; PETROVICHEVA, O.L., red.; ZHUKOVA, Ye.G., tekhn.red.

[Laboratory exercises in soil microbiology] Laboratornye zaniatiia po pochvennoi mikrobiologii. Leningrad, Izd-vo Leningr. univ., 1960. 183 p. (MIRA 14:1)
(SOIL MICRO-ORGANISMS)

CHIZHIK, I., prepodavatel' politdistsiplin

Let's teach by concrete example. Prof.-tekh.obr. 18 no.12:24 D '61. (MIRA 14:12)
(Communist education)

ChIZhIK, I. A.

23601. EFFEKTIVNOST' PRIMENENIYa MOLOChNOKISLYKh ZAKVASOK PRI SILOSOVANII KLEVERA I KLEVERNOY OTAVY. SBORNIK NAUCH. TRUDOV (LENINGR. VET. IN-T), VYP. 10, 1949, c. 214-32. - BIBLIOGR: 19 NAZV.

SO: LETOPIS' NO. 31, 1949

CHIZHIK, Ivan Andreyevich

[Nutritional value of local feeding stuffs; northwestern areas of the U.S.S.R.] Pitatel'nost' mestnykh kormov (Severozapadnoi zony SSSR) Moskva, Gos. izd-vo selkhoz lit-ry, 1956. 182 p. (MLRA 10:5)

(Feeding and feeding stuffs)

CHIZHIK, Ivan Andreyevich; kand.sel'skokhoz.nauk; SARDONIKSOV, Nikolay Arkad'yevich, kand.sel'skokhoz.nauk; CHUBINSKIY, Vasiliy Vasil'yevich [deceased]; BOLOGOV, G.N., red.; MOLODTSOVA, N.G., tekhn.red.

[Manual of practical studies in the breeding of farm animals and specialized animal husbandry] Rukovodstvo k prakticheskim zaniatiiam po razvedeniiu sel'skokhoziaistvennykh zhivotnykh i chastnomu zhivotnovodstvu. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1958. 324 p. (MIRA 12:4)

(Stock and stockbreeding)

CHIZHIK, I. A., Doc Agric Sci (diss) -- "Coarse and juicy fodder in the winter rations of dairy cows (Zootechnical investigation)". Leningrad, 1959. 44 pp (Min Agric USSR, Leningrad Vet Inst), 150 copies (KL, No 24, 1959, 144)

CHIZHIK, Ivan Andreyevich; BOLOGOV, G.M., red.; BARANOVA, L.G., tekhn.red.

[Practical assignments in specialized animal husbandry] Prakticheskie zaniatiia po chastnomu zhivotnovodstvu. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1960. 373 p. (MIRA 13:10)
(Stock and stockbreeding)

CHIZHIK, Ivan Andreyevich, prof.; PLATONOV, A.V., red.; SMIRNOVA, M.I., tekhn. red.

[Animal husbandry; laboratory and practice lessons] Zhivotnovodstvo; laboratorno-prakticheskie zaniatiia. Moskva, Uchpedgiz, 1963. 414 p. (MIRA 17:3)

PROKOPCHUK, A.Ya., prof., CHIKHIK, I.S.

Achorion gallinae. Sbor.nauch.rab.Bel.amuch.-issl.kozhno-ven. inst. 4:147-148 '54 (MIRA 11:7)
(DERMATOPHYTES)

CHIZHIK, I.S.

Case of complications caused by epillin (paracxyphenylphenylphenethyl-ketone). Sbor.nauch.rab.Bel.nauch.-issl.kozhno-ven.inst. 6:389-390 '59. (MIRA 13:11)

(SKIN--DISEASES)
(KETONES--TOXICOLOGY)

USSR/Chemistry - Rubber Chizhik, M. V. FD-2734

Card 1/1 Pub. 50 - 15/20

Authors : Lirner, S. M., Chizhik, M. V., Przhebyl'skiy, M. I.

Title : Pressure molding of compounded rubber with the aid of a worm screw feeder

Periodical : Khim. prom. No 5, 300, Jul-Aug 1955

Abstract : The design and operation of a device by means of which compounded rubber is fed into a mold are described. Pressure on the rubber is exerted by means of a worm screw which extrudes the rubber from the feeder into the mold. One figure.

CHIZHIK, N. YA.

USSR/Engineering
Industrial Equipment
Electrical Equipment Apr 49

"Conference of Workers of Factory Laboratories in Leningrad Enterprises"
4 pp

"Zavod Lab" Vol XV, No 4

Conference met 13 Dec 48, with representatives of 71 machine-building factories, 16 scientific research institutes, and 12 higher technical schools taking part. P. M. Virilep, director, Cen Lab, Elektrosila Factory imeni Kirov, submitted a report on methods by which factory laboratories aid production. Elektrosila Factory is largest USSR electrical machine-building factory. M. Ya. Chizhik, director, Cen Lab, Factory imeni Stalin, submitted a report detailing important research in producing new types of high-qua lity steel with increased strength, capable of prolonging work at high temperature. This will permit further technical progress in turbo construction. N. A. Dumler, director, Cen Lab, Krasnogvardeyets Factory, submitted a report on economic leaders' aid to factory production. The factory has been equipped with new instruments and apparatus.

PA 43/49T59

USSR/Farm Animals. Small Horned Animals Q-3

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 50013

Author : Chichik N.A.
Inst : Leningrad Institute of Veterinary Science
Title : The Effect of Increased Feedings with Juicy and Green Rations upon Digestibility of Nutrient Substances by Lactating Cows.

Orig Pub : Sb. rabot Leningr. vet. in-ta, 1957, vyp. 16, 151-155

Abstract : At the Leningrad district experimental farm station 9 tests were performed on 3 groups of cows. During the first period (20 days) the cows received a medium large ration of juicy feeds, and during the second period they received a double ration. Control group cows were kept on a hay diet. Cows receiving juicy feeds (except sunflower silage) displayed increased digestibility of nitrogenous substances and of carbohydrates. When the cows were fed very large quantities of juicy rations, even when they contained optimal amounts of roughage, functions of digestive organs were inhibited, and complete utilization of juicy feeds was not assured.

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USSR/Farm Animals. Small Horned Cattle

Q-3

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 50018

Author : Chizhik N.A.
Inst : Leningrad Institute of Veterinary Sciences.
Title : The Effect of Certain Juicy and Green Feeds Upon Nitrogen, Calcium, and Phosphorus Metabolisms in Lactating Cows.

Orig Pub : Sb. rabot Leningr. vet. in-ta, 1957, vyp. 16, 156-160

Abstract : Three groups of cows which were tested at the Leningrad district experimental farm station, received nearly equal amounts of N, Ca, and P per 1 kg of milk with their rations of various juicy and green feeds. A content of 18-20 gr of nitrogen per 1 kg of milk proved to have different metabolism indicators in different rations. In hay rations the digestibility of protein amounted to 54.07 percent, in rations containing fresh fodder cabbage to 63.98 percent, in rations with field turnips to 61.70 percent, and finally, in rations with girasole silage to 49.16 percent. A negative Ca balance was observed when hay rations were fed to the animals. A

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USSR/Farm Animals. Small Horned Cattle Q-3

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 50018

positive Ca balance was observed when rations were used which contained fodder cabbage and tubers. A definite regularity with respect to P metabolism was not established.

Card : 2/2

ZANKOVICH, L.A., promyshlenno-sanitarnyy vrach; CHIZHIK, N.V., promyshlenno-sanitarnyy vrach

Working conditions, morbidity and industrial traumtism in the Minsk Spare Parts Factory. Zdrav.Bel. 8 no.7:9-11 Jl '62. (MIRA 15:11)

1. Iz sanitarno-epidemiologicheskoy stantsii Zavodskogo rayona gor. Minska (glavnyy vrach P.F.Filipenko).
(MINSK--MEDICINE, INDUSTRIAL)